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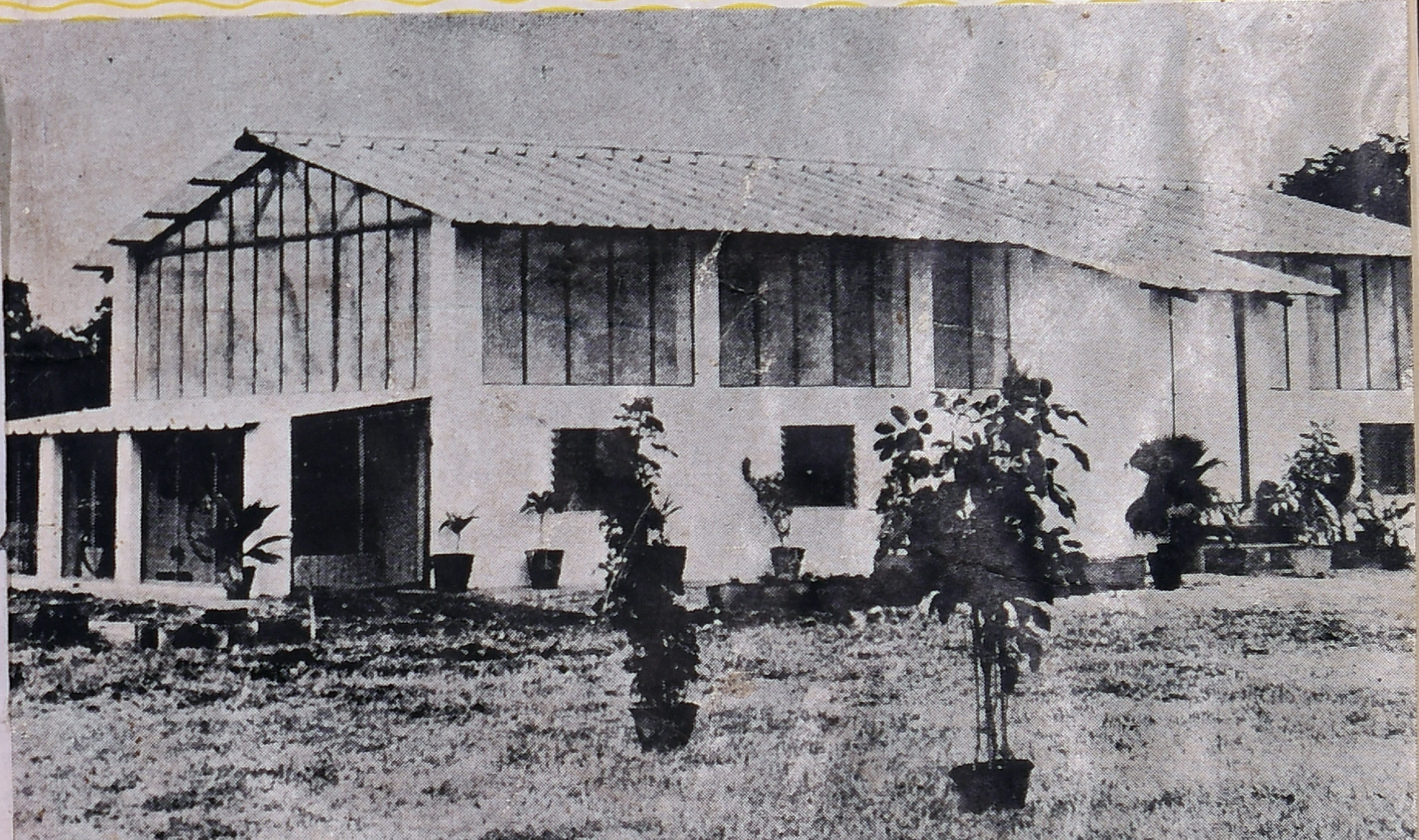
THE SOUTHERN FOREST RANGERS COLLEGE MAGAZINE

ol. 49 ANNUAL 1973

Vol 49, 1973



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ON THE COVER

The new Glass House in the Botanical Garden in the Southern Forest Rangers College Estate opened by the Hon. Prof. Sher Singh, Union Minister of State for Agriculture on 1-11-1972.

SOUTHERN FOREST RANGERS COLLEGE

Chairman :
A. M. MAHMOOD HUSAIN, I. F. S.
Principal.

Editor :
M. HARIKRISHNAN, I. F. S.
Instructor

Joint Editor :
K. M. KUTTAYA
Assistant Instructor

Annual - 1973

MAGAZINE

THE SOUTHERN FOREST RANGERS COLLEGE MAGAZINE

Vol. 49 ANNUAL 1973

Editorial

MEN, MATTERS AND MEMORIES

We have been fortunate this year in securing an excellent response from contributors in the form of articles and information for our alumni corner. Consequently we have many more articles by student contributors in this issue than in the previous year. This is as it should be in a College Annual. One hopes that this healthy and encouraging trend will continue.

ABOUT OURSELVES

1972—'74 Rangers Course :

87 students comprise the 1972—74 course that commenced on 1-11-1972. Of these, one is from Sierra Leone in West Africa and two are from Sri Lanka. The state-wise particulars of the students are as follows :

S. No.	State		Number in 1972–'74 Course
1.	Andamans	...	2
2.	Andhra Pradesh	...	—
3.	Ceylon (Colombo Plan)	...	2
4.	Gujerath	...	6
5.	Goa	...	3
6.	Kerala State	...	11
7.	Madhya Pradesh	...	23
8.	Maharashtra	...	10
9.	Mysore	...	20
10.	Sierra Leone (SCAAP)	...	1
11.	Tamil Nadu	...	9
			87

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TOURS

As in previous years the major part of the first half of the year was spent on tour. The classes were taken to forest areas all over the country to study and observe diverse forestry practices.

Seniors (1971—'73 course):

The first tour was to Goa, Mysore and Kerala with camps at Goa, Dandeli Makut, Mysore and Nilambur. Dandeli and Goa were included in the tour itinerary for the first time. The seniors left headquarters on 8—1—73 and returned on 1—2—73.

On 1—3—73 the seniors left for Ooty for their road engineering tour, and returned on 13—3—73. On 15—3—73 they left on their North India tour with camps at Hyderabad, Allapali, Nagri, Agra and Dehra Dun. They returned to headquarters on 20—4—73, after 35 days.

The final tour for the course was to Bangalore for field engineering at the Madras Engineer. Group campus and visits to important forest areas around Bangalore. This tour commenced on 8—7—73 and ended on 1—8—73.

Juniors (1972–'74 coursc)

The first tour to Coimbatore North and Coimbatore Central divisions (Bannari and Sadivayal camps) was held from 10—1—73 to 25—1—73.

The second tour was of forest areas in the Western Ghats and its offshoot, the upper Palnis, with camps at Thenmala, Asaripallam, (near Nagercoil), Lower camp and Kodaikanal. The tour commenced on 4—3—73 and ended on 30—3—73.

The next tour for the Survey Practical Examination, orienteering and study of forests in Coimbatore South division was to Topslip camp from 24—4—73 to 9—5—73.

The juniors final tour of Cuddalore, Tiruchi and Ramanathapuram divisions was held from 9—7—73 to 27—7—73 with camps at Rameswaram, Neyveli and Arimalam.

Both classes had a brief mid-term vacation from 10—5—73 to 27—5—73.

Sports Activities :

The annual athletic sports were held on 17—2—73. Wing CDR R. R. Rastogi, Chief Technical Officer, Air Force Station, Sulur presided over the function. Shrimati Fatima Hussain distributed the prizes. A detailed account of sports day appears elsewhere in this issue.

The annual Marathon race was held on 23—12—1972. R. Vincent of the 1972—'74 Rangers' course came first. All participants completed the distance satisfactorily. Inter-divisional tournaments were held in hockey, football, volley-ball, cricket and kabbadi. The students also took part in a tennis tournament, both singles and doubles. U. K. Parashar won the Fischer Cup for tennis singles

CONVOCATION 1972

The twenty-fourth annual Convocation of the college was held on 1—11—72. Prof. Sher Singh, Minister of State for Food and Agriculture, presided over the function and distributed certificates and prizes to the outgoing students of the 1970—72 course. The function was attended by a distinguished gathering of officials and non-officials. A detailed account of the Convocation proceedings appears elsewhere in this issue.

Association Day — 1973

The college celebrated Association Day for 1972—'73 on 24—8—73. Lt. Col. P. A. Mendonca, Commander, N. C. C. Group Headquarters, Coimbatore, presided over the function and Mrs. Mendonca distributed the prizes. The function began with tea and light refreshments served in the Mess Lounge Hall. Shri A. M. Mahmood Husain, I. F. S.. Principal, welcomed the chief guest and the gathering. The General Secretary then presented the annual report of the Association. The chief guest then addressed the gathering in an interesting and thought-provoking speech. This was followed by a programme of variety entertainment held in the old Mess Hall. The students had worked hard to make the function a success and were both happy and proud with the results of their efforts. An overflowing auditorium warmly applauded the various items of the entertainment programme. A distinctive feature of the evening was the presentation of plays, dance dramas and songs in the various regional languages of the representative states, with a degree of near professional skill. Hilarious skits were enacted in Hindi, Malayalam and Tamil. The dance dramas consisted of an impresssive Yakshagana (Kannada), a humorous Loknatya (Marathi), a vigorous Bhangra (Punjabi) and a colourful Sri LankaBaila. There were also delightful group songs in Bengali and Kannada and several tuneful pieces of light music. Mrs. Mendonca distributed prizes to the winners of the indoor games tournaments (table tennis, badminton, carroms and chess), music and quiz competitions and veriety show programmes. The student secretary of the Common Room section delivered a vote of thanks. With the National Anthem an enojyable evening came to a close.

Wild Life Day:

Wild Life Day was celebrated on 28—10—72. Group Capt. J. S. Sodhi, Commandant, Air Force Administrative College presided over the function. Shri K. K. Nair, I. F. S., Chief Conservator of Forests, Kerala, delivered a topical and interesting speech. Mrs. Sodhi distributed the prizes. The evening was enlivened by a variety show of programmes presented by various educational institutions.

Staff:

There were several changes in the instructional staff of the college during the period under report, i. e. from 1—11—1972.

Shri C. T. Bopayya, Assistant Instructor was relieved on 17—11—1972 and reverted to his parent state, Mysore.

Shri H. Rajagopala Shetty, Assistant Instructor was relieved on 7-6-73 and reverted to his parent state, Tamil Nadu.

Shri T. Rajamannar, Assistant Instructor, was relieved on 10—8—73 and reverted to his parent state, Andhra Pradesh.

We record our appreciation of the services of these three officers who were with us for a long time, and wish them well in their future service.

Shri P. K. Zachariah from Kerala joined us as Assistant Instructor on 17—11—72.

Shri H. M. Gidwani, I. F. S from Goa joined the college as Instructor on 7—6—73.

On 2—7—73 Shri P. A. Abraham from Kerala joined the college as Assistant Instructor.

Shri K. M. Kuttaya from Mysore joined us as Assistant Instructor on 10—8—73.

We welcome our new staff members and wish them all the best.

Distinguished visitors:

On 12—4—73 Professor S. D. Richardson of the Department of Forestry and Wood Science, University College of North Wales, Bangor, visited the College and the Gass Forest Museum. Professor Richardson is Chairman of the F. A. O.'s Advisory Committee on Forestry Education and was touring India to observe forest education and training as imparted in the country. He met and addressed the junior Rangers' class. His observations and comments were of great interest to everyone.

—*EDITOR.*

ASSOCIATION DAY

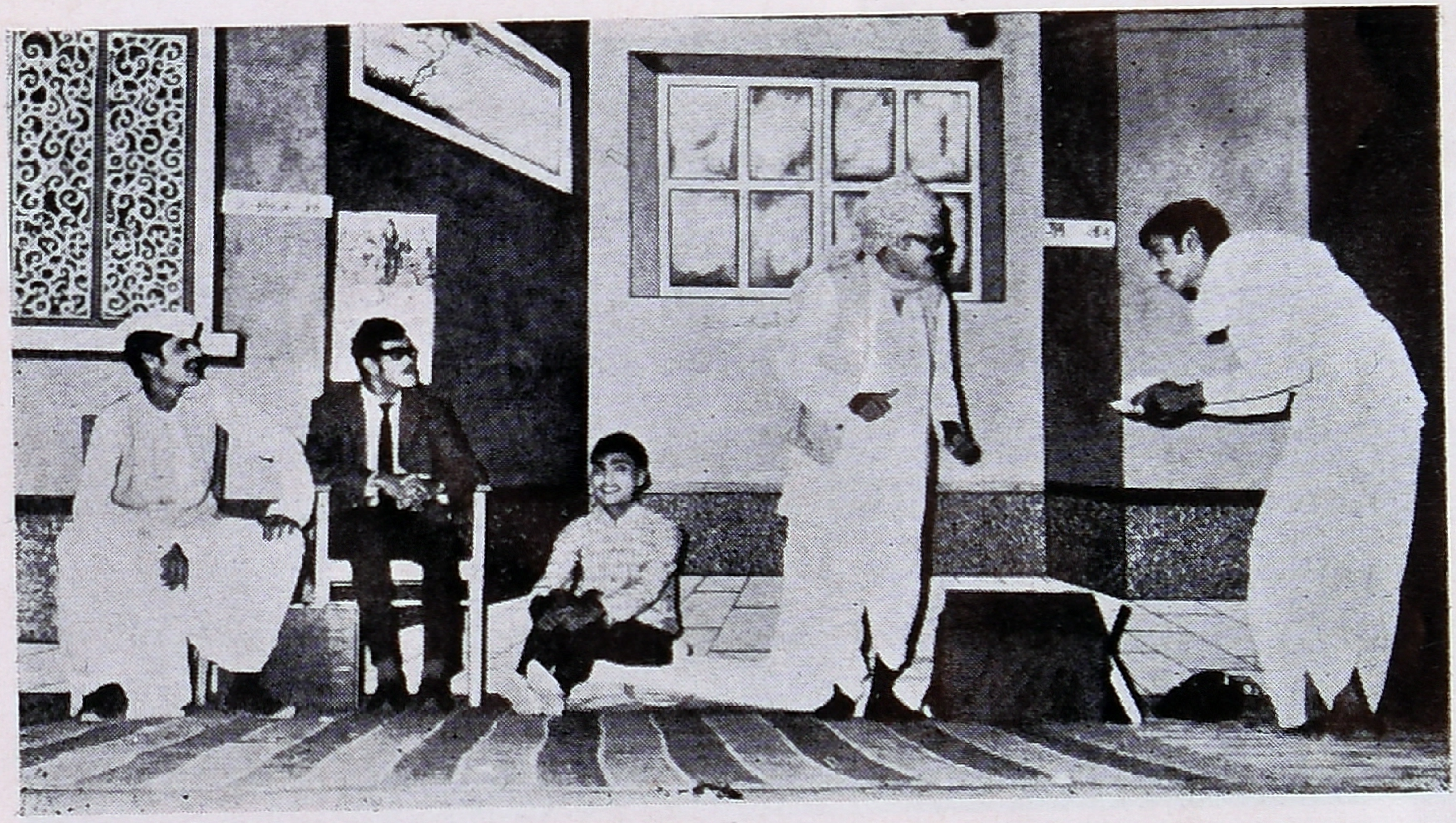
Chief Guest Lt. Col. Mendonca's Address.

ASSOCIATION DAY

Prize Distribution.

ASSOCIATION DAY

The Bhangra Dance



Hindi Play

ASSOCIATION DAY

Yakshagana

Malayalam Skit

Twenty Fourth Convocation of the Southern Forest Rangers College - 1972

The Annual Convocation of the Southern Forest Rangers College, for the trainees of the 1970–72 batch was held at the Southern Forest Rangers College, Coimbatore, on 1st November, 1972 at 4.30 p. m.

The Chief Guest **Prof. SHER SINGH**, Union Minister for Food and Agriculture, was received on arrival by Shri S. K. Seth, I. F. S., President, Forest Research Institute and Colleges, Dehra Dun, Shri T. N. Srivastava, I. F. S. Inspector General of Forests, Govt. of India, New Delhi, Shri K. P. Karamchandani. I. F. S., Director of Forest Education, Shri K. A, Bhoja Shetty, I. F. S., Chief Conservator of Forests Tamil Nadu and Shri A. M. Mahmood Husain, I. F, S., Principal, Southern Forest Rangers College, Coimbatore.

On arrival, **Prof. SHER SINGH** declared open the Green House of the Southen Forest Research Centre. He then proceeded to the New Hostel where he was introduced to the Officers of the Southern Forest Rangers College and Forest Research Centre. After inspecting a Guard of Honour presented by the students of the Southern Forest Rangers College, he declared open the elegant and imposing New Hostel of the Southern Forest Rangers College. The Minister was then escorted to the dais.

Welcoming the Chief Guest **Shri S. K. Seth, I. F. S,** President, Forest Research Institute and Colleges, Dehra Dun spoke as follows:

Hon'ble Minister, Ladies & Gentlemen,

Today we have gathered together to attend the 24th Convocation of the Southern Forest Rangers College which came under the administrative control of the Government of India as a regional training and research centre on July 1, 1948. Convocation is indeed a very meaningful function specially in the lives of professional trainees as a rewarding culmination of their formal education. And who could be better suited, Sir, then a distinguished educationist of your stature to preside over such a function. Last year we keenly awaited your visit to this Institution but were deprived of the same due to your sudden illness. Your thought-provoking valedictory address was however read out at the convocation. It is indeed a privilege to have you to grace the occasion in person today. I welcome you heartily. To you, ladies and gentlemen, my cordial welcome for responding to our invitation and gracing this congregation.

A forest is, basically, a collection of trees. It is a living community of plants in which trees are the dominant species. There are also animals large and small living in the forests. These plants and animals live and die in a wonderful cycle of both competition and harmony. A forest means many things to many people. To the artist, it is a thing of beauty whose serenity is to be captured on canvas. To a farmer - villager it may mean his livelihood To a trader and industrialist it may represent only the raw material factor in an economic formula. To a vacationer - it may be just a scenic spot in which to picnic. To the forester - it means many things - wood, water, wildlife, soil stabilization, forage, recreation and hoard of other forest products.

Only 1/5th of our country's land area is forested - and of this too not more than 50% is of commercial and productive value. Wood is vital to our security, our economic strength and our well being. Fortunately forests are a renewable resource. That is, by applying the principles of good forestry, we can use our forests and still always have them. But we must manage our forests not only for the wood they supply but also for all the other benefits we get from them - water, wildlife, forage, recreation and soil protection. It is this "multiple use" of forest that has to beeome a guiding concept of all our future management.

In the field of technology too - ours - has been an age of rapid scientific progress. No matter what the intrinsic value of any raw-material may be it cannot be expected to hold its own unless advanced through continued research and technological development. The various forest products - both major and minor are no exception to this general trend. Wood - once held to be the most versatile industrial raw-material has had its field constantly encroached upon and its very existence threatened by a variety of competitive products such as steel, cement and aluminium. If the past few decades have seen the rise of numerous competitors of wood and other forest products they have also marked radical changes in the utilisation of forest products through constant research. This has resulted in modified products and processes to a point where many of them are hardly recognisable today.

The pace of all round development and development of forests has been rather slow in our country- for understandable reasons - but rapid development both in the field of "multipleuse" management of forest and further utilisation of all its products - both tangible and intangible - lie ahead. On you, young foresters of the future, lies this great responsibilty of re-orienting the future management and utilisation trends and facing the challenges that lie ahead. You have been traditionally considered the back-bone of your professional service One chapter of your life - the formal education is ending today - and yet another one is just beginning. Education is a continuing process - it lasts as long as life itself. I congratulate you all on the successful completion of your training at this Institute and wish you a very rewarding career.

I now call upon the Director of Forest Education to present his report.

* * * *

Then the Annual Report on the working of the Southern Forest Rangers College, Coimbatore, for the year 1971-72 was presented by Shri K.P. Karamchandani, I. F. S., Director, of Forest Education, Forest Research Institute and Colleges, Dehra Dun, as follows:

ANNUAL REPORT ON THE WORKING OF THE SOUTHERN FOREST RANGERS COLLEGE, COIMBATORE FOR THE YEAR 1971 - 72.

Forestry Education in India includes several distinct levels - the professional, the sub-professional or technical and the vocational levels. Of these, the vocational level schools which train Foresters and Forest Guards fall under the control of the respective State Governments. So far as the training of the professional and sub-professional level personal is concerned the responsibility is entirely that of the Union Goverment as per the Forest Policy of India.

A common forest education is a very effective means of inculcating an *espirit de corps* among forest officers, of developing a common outlook and ensuring concerted and integrated policies throughout the country. Speciliza-tion in various disciplines within forestry and nature conservation has also to be provided for in the training of the forest officers.

The Southern Forest Rangers College and the Regional Forest Research Centre at Coimbatore meet the requirements of Forest Rangers for the States of the central and the southern region. Madhya Pradesh, Gujarat, Maharashtra, Andhra Pradesh, Mysore, Tamil Nadu and Kerala States and Union Territories of Andamans, Goa, Dadra and Nager Haveli send their candidates to this College. In addition, there is a sprinkling of candidates from South-East Asian and African countries. The training is broad-based and continues to maintain an excellent reputation in these foreign countries, despite the growth of their own institutions imparting education in forestry in recent years.

Strength of Trainees :

The 1970-72 batch passing out today has a strength of 82 trainees. Of these four are from Ceylon and two from Malaysia. These are Shri A. Piyasiri, Shri N. C. E. Anandarajah, Shri R. S. Edirisooriya and Shri E. S. R. Wijesooriya deputed by Ceylon and Shri Liew Fredric aud Shri G. Hiu deputed by Malaysia under the Colombo Plan. With this class, this College crosses the 2,500 mark in the number of Rangers trained here. The actual number including this class being 2,555.

The 1971-73 batch started out with 83 trainees. Two trainees detained from 1970—'72 course joined this course making a total of 85.

Course of Studies :

The duration of the course, annual plan of work, subjects taught, syllabi and the relative emphasis remained the same without any major changes. The system of periodical examination at the end of first 5 months was modified and the assessment of initial performance and fitness for retention in the College judged on the basis of a series of quiz tests both announced and unannounced. The semester system was brought into force and final examinations in certain subjects held for both junior and senior classes midway through the year. This system results in less strain and leads to a better concentration. Advantage was taken of the presence of the Logging Training Centre of the Government of India on the campus to provide a course of lectures and demonstrations in basic logging.

Tours

The emphasis on practical education was maintained. The tours were rationalized and the dates of touring in the different forest zones modified in order to make the tours more purposeful free them of some handicaps imposed by climate. The Ranger trainees were taken out on study tours covering 14 weeks in the first year and 15 weeks in the second year (totalling in all 29 weeks) during their training period of two years. During the year under report the Ranger trainees toured in the states of Utter Pradesh, Madhya Pradesh, Maharashtra, Mysore, Kerala and Tamil Nadu. These tours provided the trainees an opportunity to study the various types of forests, methods of management adopted under different conditions and various other aspects of practical forestry. In addition, regular week-end field excursions were undertaken as usual. Visits to various forest industries some wild life sanctuaries and Forest Research Institute and Colleges, Dehra Dun were also arranged during the tours.

A three week course in field Engineering and Weapon Training with the Madras Engineer Group and Centre at Bangalore was undertaken in August 1972. This is a regular feature of training which provides an extremely useful practical exercise in construction of bridges and other engineering structures.

A new cross country competition within the forest called the "Orienteering Exercise" preceded the Survey Practical camp of the junior class at Topslip in May, 1972 The trainees were left in pairs with a map trace to find their way to Topslip camp (from a point about 5 Km. away), affixing specially made rubber seals kept at 5 obligatory points on the allotted route to the route chart given to the pair. Six different routes were adopted and successive pairs left starting point at 4 minutes intervals. The competition proved a considerable success and gave the trainees valuable practice in finding their own way through unfamiliar forest with the aid of a map.

Other lectures etc.

A course of 15 lectures on Cooperation were delivered by the College Staff and by Mrs. C.T. Bopayya, and Shri K. R. Venkatesan IFS State Sivi-culturist, Madras, A course of 8 lectures on First Aid to the injured was given by Dr. R. Swami Dass, Medical Officer, Government Dispensary, Lawely Road, Coimbatore, Dr. K. Balakrishnan, B. Sc., M. S., Assistant Surgeon, Coimbatore and Dr. M. P. Pranesh, M. D., Medical College Hospital, Coimbatore for the senior course trainees leading to the award of First Aid Certificates of St. John Ambulance Association to the successful candidates.

Examination

Final examinations for 1970-72 Rangers Course and First Year Annual Examination for 1971-73 Rangers Course on different subjects were conducted by senior forest officers from different States of the country

Extra - Curricular Activities

To ensure a comprehensive personality development, besides the regular courses of study the individuality of the trainees was allowed to have its full play through cocurricular activities. The trainees from diffierent States and foreign countries were distributed in small groups to ensure complete mixing up in these activities.

During the year the Southern Forest Rangers College Association organised and conducted co-curricular activities under six different sections viz.,

(1) Literary and Science Section
(2) Sports Section
(3) Common Room Section
(4) Magazine Section
(5) Wild Life Section, and
(6) Camera Club Section.

The students of this College participated in the inter-Collegiate Elocution Competition etc. conducted by various city colleges.

A common mess continued to be maintained under the management of the elected Mess Committee, guided by the staff of the college. The mess is functioning in the newly constructed building attached to the new hostel.

The College magazine is being published annually from 1953 onwards.

Physical training, drill and sports

To build up their physique, stamina and endurance. necessary to withstand hard work in rough out-door life in forests, physical training continued to be an important part of the training course. Regular physical training in the early hours of the morning, active games and sports in the evenings and long marches in the forest areas during the excursions and tours formed part of the training programme.

The Annual Athletic sports of the College was held on February 20. 1972. L C D R T. P. Nair Officiating Commanding Officer, I. N, S. Agrani, Coimbatore presided and took the salute at the march - past and distributed the prizes to the winners. The Championship cup was won by Shri Fredrick Liew, 1970 - 72 course trainee deputed by Malaysia under the Colombo plan Scheme.

The annual cross - country Marathon race, extending over a distance of 8 miles was run by the trainees on December 24, 1971. Shri C. S. Sharma, 1971-73 course trainee deputed by Madhya Pradesh State was first in the race and won the first prize and the cup for the event.

The Principal, Southern Forest Rangers College was recently chosen as the President of the inter-collegiate Athletic Association of Coimbatore and the Officer - in - charge of sports as the Secretary. This reflects in a way the increasing interest taken by the College trainees in sports and games at Coimbatore.

Health

There was no case of serious illness amongst the trainees during the year. The Medical Officer of the Tamil Nadu Agricultural University Coimbatore and the Superintendent of the Coimbatore Medical College, Coim, batore continued to provide the necessary medical and health facilities to-them.

Library and Gas forest museum

During the year over 73 books were added to the College Library. A number of magazines and papers were subscribed for. The Gass Forest Museum continued to serve as an important teaching aid.

Building

A new mess building at an estimated cost of Rs. 23,170/- and a new hostel at a cost of Rs. 15,780/– were constructed and brought in use recently for the trainees. Scheme or providing bulk water supply in the estate, at an estimated cost of Rs. 401,709/– has also been sanctioned by the Ministry and the work is in progress. Proposals for additional lecture halls, auditorium and laboratories for the Research Centre are under consideration of the Government of India. With the setting up of the Forest Research Centre in the campus and the expanding College activities, the demand for residential quarters for the employees has grown considerably and proposals have been made for approval of the Government for new constructions and conversions of the old buildings. Construction of a Rest House is also under correspondence. During the year, congestion continued as in earlier years as the existing buildings were insufficient to accommodate the strength in the campus.

Staff

During the year under report Shri L. G. Kulkarni joined as Assistant Instructor from Maharashtra on January 10, 1972 and Shri M. Sivarajan, IFS reverted back to Kerala State. There was no other change amongst the instructional staff. Research staff continued to lecture on their specific subjects to the trainees of the College.

Acknowledgement

Papers for the final examination etc., were as usual set by selected forest officers of various States and other departments. We are grateful to all these officers for their co-operation in undertaking the work.

The College also received full cooperation and assistance from the Chief Conservators of Forests, Conservators of Forests, District Forest Officers and their staff in all the areas visited by the trainees during the tours.

The railway authorities and the various transport agencies rendered all required assistance during the tours. The Commandant, Madras Engineer Group and Centre, Bangalore was kind enough to conduct the course in Field Engineering and Weapon Training for the Senior Ranger trainees. Our thanks are also due to Shri G. Venugopal, Chief, Logging training Centre, Coimbatore who took pains to deliver the lectures on logging and to Mrs. C.T. Bopayya, who kindly delivered some of the lectures on Cooperation. The Superintendent, Coimbatore Medical College Hospital, Coimbatore and the Medical Officer, Dispensary of the Tamil Nadu Agricultural University, Coimbatore rendered medical aid to the trainees whenever necessary. We are thankful to all these officers for their cooperation in undertaking the work. Last but not the least I express my deep sense of gratitude to all the officers of the Southern Forest Rangers College and Research Centre including the principal for all that they have done to maintain a high standard of forest education.

And now, may I congratulate you all who are passing out of the portals of the College today after successful completion of your two years training programme. You all have, I am sure, a feeling of pride and achievement and we a feeling of fulfil-ment. Today you enter into a larger fraternity of foresters whose duties, functions and responsibilities - nay even the pains and pleasures have a singularly common denominator.. We will continue to maintain a strong link - the link of the profession. I also take this opportunity to wish you all a very meaningful and rewarding future in the service of your State and country. May God be with you.

Then Shri A. M. Mahmood Husain, I. F .S., Principal, Southern Forest Rangers College, Coimbatore, presented a report on the Green House and the New Hostel, declared open by the Minister as follows:

Respected Sir, Ladies & Gentlemen,

Before announcing the results of the 1970-72 course, I shall with your kind permission, present a report on the Green House and the New Hostel, just declared open by you, Sir.

The Green House (called 'Padap Griha' in Hindi) is an invaluable aid for forest research in the Regional Forest Research Centre at Coimbatore. Many trees and plants of importance in forestry can be normally propagated only by seed. The new Green House with its modern facilities will make it possible to propagate such species vegetatively (e.g. through portions of the shoot system). So this is expected to give a great fillip to tree improvement work in the region and evolution of superior strains for large scale afforestation work. It will also facilitate the study of forest tree diseases.

The construction incorporates a number of features, many of which are virtully unique in India. The following are the principal features:

(1) The roof and side walling is of indigenously made fibre glass. The trade name of the fibre glass is Tufflite 'E' grade which has 89% light transmission according to tests conducted ot the National physical Laboratory.

(2) In order to insulate the interior, a double door construction has been adopted. Both are flush doors with a moisture proof fibre glass facing·

(3) Two desert coolers and two exhaust fans are installed and so located as to create a draught of cool and humid air across the length of the green house.

(4) Mist propagation equipment has been installed. A sump, a motor and a two stage pressure pump supply water at the required pressure (about

100 lbs. per sq. inch - 100 psi), through a series of pipes of graded diameters.

(5) Spray nozzles of special design with filters are installed over vertical risers.

(6) An electronic timer regulates intermittent misting with adjustable time intervals. Continuous misting is not desirable.

(7) Ventilation when needed is provided through 8 sets of fibre glass shutters and glass louvres in aluminium frames.

(8) An automatic clockwork thermohygrograph is installed to give a continuous record of humidity and temperature inside the green house. This will enable correlation of the results achieved in propagation with temperature and humidity conditions.

(9) Adequate lighting with flourescent lamps has been provided.

(10) A new paint (Sandtex) just introduced has been used for all walls and benches, etc. The makers claim its life to be 12 years.

These features are easy enough to describe now. But there is hardly any prototype for this type of green house in the country - for us to model ours upon. At each stage, decisions had to be taken by us based on a close study of available foreign and Indian literature. Each stage was something of a challenge to our ingenuity and skill.

This is also the first time that the Central P.W.D. had constructed a green house of this type. Innovations became necessary and many of original ideas had to be discarded.

Altogether this green house which had the good fortune of being inaugurated by the Hon'ble Minister of State for Agriculture today can be a versatile plaything in the hands of this Forest Research Centre. Many green houses under tropical conditions become hot houses where plants do not thrive, where plants even languish and wither. Such green houses become non-functional. Green houses with mist propagation facility alone but without cooling arrangements exist at the Birla Laborotory, Agri-Horticultural Society of India at Calcutta and at Hasaraghatta near Bangalore, where the laboratories of the Indian Institute of Horticultural Research are located.

It is not too much to say that the proper use of this green house by this Forest Research Centre and by the State Forest Departments of the Southern Region can lead to a significant step forward in important sectors of forestry research and development.

I must here record with a deep sense of gratitude the valuable assistance I have received from the officers of the Research Centre and also thank the Central P. W. D. (Civil and Electrical) authorities at various levels for pushing ahead with the construction and ensuring completion of the work in time for the inauguration by the Hon'ble Minister today. The P. W. D. contractor Shri paramasivam has indeed done his very best to keep to the target date. The sanctioned estimate is for Rs.44,900/- plus departmental charges of Rs. 5,276/-.

New Hostel

In order to fulfil the needs for permanent hostel and mess accommodation, a New Mess was constructed in 1969 at a cost of Rs. 2,32,170/-. This was declared open on 31—10—1969 by the Hon'ble Shri Anna Saheb P. Shinde, Minister of State for Agriculture, New Delhi. The New Hostel was constructed at a cost of Rs. 15, 90,720/- and completed in 1971. Now the students are provided with individual rooms with a balcony complete with furniture and lights and fans. Common bath room facilities are provided in each storey. This is a reinforced cement concrete four storeyed framed structure with modern architecture. It has two rows of rooms with a corridor serving as entrance to both sides of the rooms. Totally there are 209 rooms and each room is having a sitout which incidentally adds to the beauty of the building. In fact this is the longest and tallest building in this area. There are two sets of toilet blocks on each floor, on both sides of the building, and the occupants of the rooms are not inconvenienced. Each floor is about 10,000 Sft.

Thus a long felt need has been met by the construction of the New Hostel building with the Mess attached to the same.

The Principal then announced the results as follows:

I am glad to announce that out of the 82 students who appeared for the final examinations, 79 have qualified for Higher Standard Certificates and 3 for Lower Standard (provisional).

I shall now call up the names of the students in the order of merit, and they will please come forward to receive the certificates from prof. Sher Singh Minister of State for Agriculture, Government of India, New Delhi. I now request you, Sir, to kindly award the certificates and prizes.

IN ORDER OF MERIT :

Honours : Nil.

Higher Standard :

S. No.	Name of Student	State
1.	D. Shettigar	Mysore State
2.	H.Ananda Gowda	Mysore State
3.	R. Ramu	Tamil Nadu
4.	U. N. Sanu	Mysore State
5.	A. M. Madpuwar	Maharashtra
6.	T. Unnikrishnan	Tamil Nadu
7,	C. K. Sayare	Maharashtra
8.	N. N. Janbandhu	Maharashtra
9.	A. R. Mansoori	Maharashtra
10.	N. Belliemuthan	Tamil Nadu
11.	S. R. Singh	Madhya Pradesh
12.	H. O. Sharma	Madhya Pradseh
13-	D. Raveendranath	Tamil Nadu
14.	K. Rajagopala shetty	Mysore State
15.	M. R. Mutgi	Mysore State
16.	K. N. Ganesan	Tamil Nadu
17.	M. K. Saraf	Maharashtra
18.	S. N Shet	Goa
19.	Manager Singh	Madhya Pradesh
20.	V. S. Bhonsle	Maharashtra
21.	A. K. Gite	Madhya Pradesh
22.	H. S Tomar	Madhya Pradesh
23.	K, L. Shivalingaiah	Mysore State
24.	U. H. Mohammad	Mysore State
25.	K. Prabodha	Mysore State
26.	N. A. Shaikh	Gujerath
27.	M. M. Patel	Dadra & Nager Haveli
28.	M. T. Macha	Mysore State
29.	S. A. Shaha	Maharashtra
30.	K. K. Purushothama	Mysore State
31.	A. Subbian	Tamil Nadu
	V. M. Pawar	Maharashtra
33.	B. Doraiswamy	Tamil Nadu
34.	S. A. Mateen	Maharashtra
35.	R. P. Tripathi	Madhya Pradesh
36.	M, Raman	Tamil Nadu
37.	D- K. Mehere	Maharashtra
38.	K. S. Deshmukh	Maharashtra
39.	V. P. Chede	Maharashtra
40.	Harish Chandra	Madhya Pradesh
41.	C. Chandran	Kerala State
42.	P. S. C. Bose	Andhra Pradesh
43.	M. R. Nimbarte	Maharashtra
44.	Rakesh Kalia	Madhya Pradesh
45.	D. K. Khaladkar	Maharashtra
46.	J. G. Shahoo	Maharashtra
47.	S. S. Tipsetty	Mysore State
48.	M. H. Birje	Maharashtra
49.	R. K. Dixit	Madhya Pradesh
50.	S. Sudershan Rao	Maharashtra
51.	R. K. Sharma	Madhya Pradesh
	K G. Maldhure	Maharashtra
53.	C. Ramakrishnaiah	Mysore State
54.	S. P. Kaushal	Madhya Pradesh
55.	C.B. Tiwari	Madhya Pradesh
56.	T. K. Bhattacharya	Madhya Pradesh
57.	Dase Gowda	Mysore State
	I. U. Momin	Maharashtra
59.	L. C. Sankpal	Maharashtra
60.	T. Singaravelu	Tamil Nadu
61.	B. B. Gaikwad	Maharashtra
62.	C. A. Dhas	Maharashtra

S. No.	Name of Student	State	S. No.	Name of Student	State
63.	T.K. Kharote	Maharashtra		**Students from Foreign Countries**	
64.	M.L. Chikkaraju	Mysore State			
65.	P. Mohammed	Kerala State		**Deputed under Colombo Plan**	
66.	S. P. Betule	Maharashtra			
67.	B. S. Jadhao	Maharashtra		**Higher standard :**	
68.	K. D. Vyas	Madya Pradesh			
69.	A. P. Harindran	Kerala State		**In order of Merit:**	
70.	B. O. Shah	Gujerath			
71.	Ali Ahmed	Maharashtra	1.	Liew Frederic	Malaysia
72.	P. Rajagopalan	Kerala State	2.	G. HIU	Malaysia
73.	B. D. Patnurkar	Maharashtra	3.	E. S. R. Wijesooriya	Srilanka
Lower standard (Provisional):			4.	N. C. E. Anandarajah	Srilanka
74.	C. G. Rode	Maharashtra			
75.	R. K. Mishra	Madhya Pradesh	5.	A. Piyasiri	Srilanka
76.	M. A. Ali	Madhya Pradesh	6.	R. S. Edirisooriya	Srilanka

PRIZES AWARDED TO 1970—'72 RANGERS COURSE

Sl. No.	Name of Prize	Name of Winner	State
1	**Honours Gold Medal**	Nil	Nil
2	**Master's Rolling Cup** (For the topmost student who does not get Honours Gold Medal.	D. Shettigar	Mysore State
3	**The Campbell walker Prize** (For Forestry).	D. Shettigar	Mysore State
4	**The Brazier Prize** (For the best outdoor Ranger)	H. Ananda Gowda	Mysore State

Sl. No.	Name of Prize	Name of Winner	State
5	**The Lodge Prize** (For Forest Engineering)	A. M. Madpuwar	Maharashtra
6	**College Silver Medal** (For Forest Utilization.	N. Belliemuthan	Tamil Nadu
7	**College Silver Medal** (For Forest Botany	H. Ananda Gowda	Mysore State
8	**College Silver Medal** (For Range Administration.	D. Shettigar	Mysore State
9	**The Stracey Prize** (For wild life Management	N. C. E. Anandarajah	Srilanka
10	**The Indian Forester Prize** (Topmost student who does not get any other prize)	R. Ramu	Tamil Nadu
11	**Hajee Mohamad Khan's Rolling cup** (For the best student from Tamil Nadu or Mysore State)	D. Shettigar	Mysore State
12	**The Parvathy Kurup's RollingShield** (For the Healthiest student during the year)*	H. Ananda Gowda	Mysore State
13	**The Pentland Shield** (For the best all–round sportsman)	Liew Frederic	Malaysia
14	**The Mannarghat Moopil Nair Cup** (For Marathon race.	C. S. Sharma (1971–73 Rangers Course-Winner)	Madhya Pradesh
15	**Amir Mohamad Khan Rolling Cup** (For the best division in Marathon race)	Junior Ranger 'A'Dn. (1971–73 Rangers Course-Winners)	
16	**Niligiri Wild Life Association Prize**	*I Prize* H. L. Joshi (1971–73 Rangers Course	Maharashtra

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* Awarded to the student who has the best attendance in P. T., lectures and games and who has secured the highest marks in games and sports, power of endurance and health on tours and in Marathon Race.

Convocation Address by the Minister.

Awarding of Prizes by the Minister. Pentland Shield Awarded to Fredric Liew (Malaysia), (Best All-Round Sportsman)

Prof. Sher Singh, Minister of State for Agriculture Inspecting Guard of Honour in Front of the New Mess.

Master's Rolling Cup Awarded to D. Shettigar (Mysore).

The Distinguished Chief Guest Prof. SHER SINGH, Minisier of State for Agriculture, Government of India, then delivered the

CONVOCATION ADDRESS

Friends,

It is with great pleasure indeed that I accepted the invitation to address the Convocation of the Southern Forest Rangers College today and give away the certificaties. I am very happy to associate myself with this function, which will be launching young Forest Rangers on their career, on successful completion of a strenuous course of training.

Traditional forestry as a career demands selfless and dedicated service with a high rating on professional integrity. It is a demanding as well as a creative and rewarding profession, bristling with opportunities for those who take up the challenge.

The renewable forest resource has an important place amongst the natural resources of a nation. In fact in many developed countries of the West economy is in a large measure dependent upon forests and forest products About one-fourth of the total land area of our country, which is under forests, is managed and administered by the forest service. The foresters of India therefore can well be proud of being the trustees of a very extensive and highly valuable resource of the country. You, young men are going to join this big fraternity today.

India is passing through a very important chapter in her long history. We have left twenty-five years of our life as a free country behind us — twenty-five years of varied experience, trials and tribulations on a vast scale, success and failure and problems of a colossal magnitute. We are richer for the experience and may claim some maturity as we face the future with a serene confidence. The green revolution has made us self-sufficient in the matter of food production. This has been made possible by the unrelenting efforts of our scientists by developing suitable techniques and technology. Our farmers also have played a notable role in this break-through.

Forestry enjoys a unique advantage over Agriculture, from the point of view of implementation of any plan for progress and development. Forests are by and large publicly owned -- as much as 98% is under the control of Government, civil and corporate bodies. It has been estimated that the total growing stock of our forests is about 2200 million cubic metres which means an average stocking of 28 cubic metres per hectare. This compares poorly with the world average stocking of 80 cubic metres per hectare.

Our forests produce wood and forage, sustain wild life, stablise stream flow, reduce soil erosion and floods, ameliorate climatic excesses and provide opportunities for outdoor recreation apart from opening avenues for employment. The prosperity of a nation depends on its capacity to conserve, develop and utilise its natural resources in a balanced way. In the present stage of development of our country, the production from our forests should also be stepped up manifold.

The gap in the supplies of forest products as compared to the demands is creating a distressing picture. The need to develop forest resources to keep pace with economic and industrial development in the country, is important. In the successive five-year plans there have been increasing financial outlays for the development of these resources. The demands of the nation in the foreseeable future was projected and attempts were made by formulating plan schemes to fulfil the requirements. However, there has been a considerable gap between the demand and supply.

A thorough knowledge of the character and potentialities of our forest resources and a skilful management involving a commensurate investment are *sine qua non* to achieve the projected demand. The gap between demand and supply will widen in 1980 and still further in 1985, unless the traditional approaches based merely on conservation is supplemented by dynamic production oriented approach.

Rigid adherence to conservation for the sake of conservation has no place in a developing country which has to live by its resources. Conservation of an eco-system based on management and development for the benefit and welfare of mankind should be the underlying future policy of the foresters. A production-oriented approach to the forest and its resources is the urgent need of the day. We should not lag behind in developing techniques and technology in the fields of optimum use, production and development consistent with conservational requirements.

Of course, it is common knowledge that the existing rights and privileges, indiscrimiuate grazing and hacking and the hazards of fire have been largely responsible for keeping down the production in larger tracts of forest areas. Even though these pernicious practices are due to historical factors, the fact remains that these are injurious and have no regard for posterity. These practices are incompatible with even the existing socio-economic conditions and the gulf will continue to widen unless the social philosophy is so developed to bring about a willing restraint in the people themselves. The social change should be the goal to be pursued so that people gladly accept the curtailment of rights without being conscious of any sacrifice on their part. The forest service can perform this function of moulding the thinking of people by operating in close liaison with people In a democratic set up it is only through maturity of local communities the qualities of foresight and willingness to look into future can be developed,

The forests today cannot satisfy themselves with the limited role of producing timbers and other forest products besides providing the vegetative cover in water shed areas for sustaining the flow in our river systems. A balanced multiple use concept has come to stay in many advanced countries. The F. A. O. has also stressed this and included recreation, wild life und control of air and water pollution as fields which cannot be relegated to the back ground by the forest managers.

It is indeed gratifying that wild life has been given finally, the much needed protection and the recent Act of the Parliament which gives adequate protection to all forms of wild life, was a long felt need. Protection and Preservation of wild life are as important functions of the foresters as the protection and management of forests. I am therefore happy that the teaching of wild life conservation has found an important place in your curriculum.

The recreational value and uses of forests though known to us for ages is not tapped and exploited as it should be done. Here is a field where many countries have capitalised on the forest assets and this holds a lesson for us. The future trends in forestry will be more linked with these aspects. Forests should serve man and therefore it is for the people to decide the policy of future judicious use and management of this great resource.

The role of a Forest Ranger in the development of forest resources is vital because it is he who has to apply the technical knowledge in execution of plans aiming at intensification of forest management. A future Ranger not only is a technician to execute forest works but he has also to play a much bigger role in intensification of forestry management.

You, young men representing good cross section of the youth of our country can thus see that you have now before you an important role to play as public servants. Intrinsically your profession has rich possibilities capable of providing a high degree of satisfaction and happiness to you not only as technicians but also from the point of view of rendering service to the society.

The purpose of professional forestry education is to enable you to fulfil your functions today and in the future in the best way possible. The operations of present day economic machinery have brought about new Problems in many sectors. I am sure this institution of high reputation would have imparted sound training not only for raising and managing forest stands but also to meet the challenges of the multi-disciplinary functions devolving on an enviromental manager.

You will shortly join the forest service of your respective states or countries. Maintenance of scientific approach in the performance of your duties should be paramount in your mind. The arduous and taxing training which you have received at considerable cost has made you capable of rising to high standards in the hierarchy of the technical service. You have to be devoted to the cause of forestry and work with missionary zeal if you want to find job satisfaction and serve the community and its people. I am confident the high standard of training imparted and the disciplined way of life cultivated by you during your stay here will usher you into a succesful career. I heartily congratulate all of you for successfully completing the courses and particularly those who have secured honours and won various prizes. I especially congratulate the young men from adjoining countries who, I hope will carry with them happy memories of their stay with us in this College and in this country.

I wish yon godspeed and the best of luck in your mission of serving the nation.

— Jai Hind.

NOMENCLATURE IN PLANTS

K. N. SUBRAMANIAN,
Research Officer, Botany Branch
Forest Research Centre, Coimbatore.

Nomenclature is the application of names to plants. Plant nomenclature has a long and chequered history. Once the plant has been identified, the correct name must be given to it. There is no record of the beginnings of plant nomenclature, for they are as obscure as the records of earliest civilizations. Early works dealing with plants are mostly in Greek or Latin. At the time when nomenclature for plants was devised, Latin was the common language of scholars and hence was adopted. Latin has the advantage of being specific and exact in meaning. Because of its precision it is ideally suited for descriptive phases in natural sciences. The Latin language employs the Roman alphabet, and therefore has an added advantage for use in scientific descriptions over other classical languages like Sanskrit, Greek, Hebrew and Chinese. Some British botanists attempted to develop an English nomenclature. It was not possible to develop this system because the same plant was known by many names and only little information was available regarding their identification. Moreover no treatment of the world flora was based on this language. An acceptable system of nomenclature should be international in character, therefore the scientific names of plants, derived from any language, must be latinised. Scientific names are of biological significance as they indicate generic and usually genetic relationships. As the same vernacular names are used for different plants they do not indicate any affinities between plants. Therefore it is absolutely necessary to know the scientific name of a plant which gives the only reliable clue to its indentity.

Herbalists in the sixteenth century were adopting classical names for plants. Most of the names used were polynomial, for example *Sida acuta* Burm. f. was earlier named as *Althaea coromandeliana, angustis praelongis follis, semine bicornio* by Plukenet. All the earlier polynomial systems of classification were superseded to some degree by the binomial system used by Rivinus, Bauhin and later consistently by Linnaeus in his *Species Plantarum* (1753). In the binomial system each plant is known by two words, the first designates the genus and the second the species. The generic name should always start with a capital letter and the specific name with a small letter. e. g. *Tamarindus indica.*

Specific names when adjectival in form, must agree in gender with the generic name which is always a noun, in the singular, nominative case. Therefore, *Santalum album* (not albus or alba) *Saraca indica* (not indicum or indicus) *Rubus ellipticus* (not elliptica or ellipticum) are the correct grammatical usage.

The rules of nomenclature as we know them today had their beginning in Linnaeus *Fundamenta Botanica* (1736), *Critica Botanica* (1737) and *Philosophica Botanica* (1751). They explain the taxonomic and nomenclatural principles employed by Linnaeus in his monumental works viz. *Hortus Cliffortianus* (1737)· *Species Plantarum* (1753), *Genera Plantarum* (1754) and *Mantissa Plantarum* (1767 - 1771). In these works all known plants were named according to a uniform system. At the time of Linnaeus, most authors tried to avoid giving different names to the same species or the same name to different species. As a general rule, priority of publication was recognised and after Linnaeus, different names were assigned to identical species. There was also a great increase in number of flowering plants from 10,000 in the time of Linnaeus to about 2,50,000 species now. Due to this enormous increase in the number of species plant nomenclature entered into confusion and there arose the need for an "International Botanical Nomenclature." The first International Botanical Congress was held in Paris in August 1867 to make an organised effort to standardize and legalise nomenclatural practices. This has resulted in the formulation of the important "Paris Code." Later periodic International Botanical Congresses were held to improve and modify the code. Thus we have the Rochester Code (1892), Vienna Code (1905), American Code (1907) etc. The latest code was framed at Seattle in 1969.

The strict application of the principle of priority has in recent years caused many name changes in plants that were well known by botanists, foresters, agriculturists and others interested in the study of plants. There is consequently widespread dissatisfaction among them that plant names, both generic and specific, change very often, invalidating well known and old established names. This is mainly due to the fact that many names published in obscure books and journals were rediscovered only after many years. The lack of proper communication between botanists working in different parts of the world in early days was also responsible for giving different names to the same species growing in different parts of the world. The present rules for regulating nomenclature have come into being as a result of the collaboration between botanists all over the world. These rules represent a very great step forward in aehieving stability in plant nomenclature. It may be pointed out that International Rules of Botanical Nomenclature permit conservation of well established generic names under certain conditions, but proposals to conserve specific names have always been defeated, particularly because the number of name submitted was so great that they could not be accepted by the International Botanical Congress.

The type method or typification:

When a species new to science is described, the author must indicate which is the type specimen on which the new species is based. If the type is not indicated, publication of the taxon, even if it be done in Latin, is not valid. In the nomenclature of types several terms are used. e.g. *Holotype* i. e. chosen by the author as the type of the taxon; *Isotype* i.e. duplicate of the type; *Paratype* i. e. specimens cited with the original description other than the holotype or isotype; *Syntype* i. e. one or more of the specimens mentioned by the author when no type was actually indicated; *Neotype* is a specimen selected to serve as nomenclatural type as long as all of the material on which the name of the species was based is missing.

Principle of Priority:

When a plant is known by more than one botanical name, it can bear only one correct name - i. e. the earliest legitimate name, validly published in accordance with the rules of nomenclature (except names conserved by the International Code of Botanical Nomenclature against the rule of priority). The following example will clearly show how *Bombax ceiba* widely known forest tree species, has undergone a series of name changes.

Andre Robyns in his monograph on *Bombax* revived the original name by studying all the world collections of the species by applying the rule "Principle of Priority."

Bombax ceiba L. Sp., p.511 (1753)

B. heptaphyllum L. Sys. Nat. *ed.* 12, 2, p 457 (1767)

B. malabaricum DC. Prodr. 1, p.479 (1824)

Salmalia malabarica (DC.) Schoot. et. Endl. Melet. Bot. p. 35, (1832)

Gossampinus heptaphylla (L.) Bakh., Bull. Jard. Bot, Buitenz., Ser. 3. 6, p.189 (1924)

Gossampinus malabarica (DC.) Merrill, Lingn. Sc. Journ., 5. p.126 (1927)

Conserved Names :

Certain generic names have been treated by the International Code of Botanical Nomenclature as exceptions to the Rule of Priority as these names have come into general use for very long periods. For example *Butea* which was published in 1892 was conserved against its earlier, valid name *Plaso*.

Effective and valid publication of new plants:

Publication of new plants is effective only by distribution of printed matter through sale, exchange or gift to the general public or atleast to botanical institutions. New names announced at a public meeting, in tradesmen's catalogues in non-scientific newspapers, or by graphic processes are not treated as effectively published. For valid publication the new name must be accompanied by a description or by a reference to a previous description. Names of new plants are considered validly published only when they are accompanied by a Latin diagnosis.

Rejection of names:

A name must be rejected in the following eases

1. When the specific name repeats unaltered the generic name e. g. Linaria linaria.
2. If it duplicates a name previously and validly published.
3. Superfluous name i. e. such names given to a plant which had already another validly published name.
4. A name owing to its use becomes a permanent source of confusion or error.
5. Names based on abnormal specimens.

Citation of Auther's Name:

For an accurate and complete citation of the name of group, and in order that the date may be readily verified, it is necessary to mention the author who first published the name in question. The abreviation such as L. or Linn., DC., Wt. etc., given immediatly after the names of plants is the name of the author who first published it. Therefore L. is for Linnaeus, DC. for De Candolle and Wt. for Robert Wight and so on, and a scientific name is incomplete without the citation of the author.

As pointed out earlier, there is widespread dissatisfaction among botanists foresters, horticulturists and other interested in plant science that name change very rapidly. As far as Indian plants are concerned, the changes are justified, because past writers of Indian flora were uncritical and different species were lumped under one name. Only careful and intensive study of different families of plants will set right things. Taxonomic work is now undertaken in India in a big way and we hope that in course of time the nomenclature of plants will get stabilized.

PROVERBS ARE THE DAUGHTERS OF DAILY EXPERIENCE

G. BALAKRISHNAN,
Collected by
Junior Stenographer,
S. F. R. C.

A Better be *alone* than in bad company.

B *Believe* not all that you see not half what you hear.

C If you run after two hares, you will *catch* neither.

D He *dies* like a beast who has done no good while he lived.

E *Empty* vessels make much noise.

F Whatsoever was the *father* of a disease an ill diet was the mother.

G No *good* building without a good foundation.

H *Hear* much, speak little.

I *Ignorance* is the mother of impudence.

K None *knows* the weight of another's burden.

L A *lazy* sheep thinks its wool heavy.

M He who *makes* no mistakes, makes nothing.

N The *nurse* is valued till the child has done sucking.

O An *ox* is taken by the horn, and a man by the tongue.

P *Public* money is like holy water every one helps himself to it.

Q *Quarrelsome* dogs get dirty coats

R Never *rely* on the glory of the morning or on the smile of your mother-in-law.

S To a good *spender*, God is treasurer.

T *Think* much, speak little and write less.

U *Unsound* minds, like unsound bodies if you feed, you poison.

V *vain*-glory blossoms but never bears.

W Be content with your *wages*.

Y In *youth* we learn; in age we understand.

Z *Zeal* without knowledge is fire without light.

AROUND US*

CH. SYMASUNDARAM
1971 – '73 Ranger Course

Unless something is done to soon reverse environmental deterioration unimaginable horrors lie in wait for us, according to experts. Scientists have solid experimental and theoretical evidence to support each of the following predictions:

1) In the United States urban dwellers will have to wear gas masks in a decade, lest pollution combined with temperature inversion will kill a considerable number of persons.
2) By 1985 air pollution will have reduced the amount of sunlight reaching the earth by one half.
3) In a decade the major ecosystems Soil and water, will break down somewhere on earth causing new diseases reaching plague – like proportions.
4) Raising the noise level will cause more heart disease and hearing loss
5) Sonic booms will damage children before birth.
6) Residual D. D. T. collecting in human liver will make the use of certain common drugs dangerous and increase liver cancer.

Man labours under the infinitely satisfying but desrtuctive delusion, that there is something special about him that makes him independent of his environment. What must be realised is that — contrary to all the teachings about our 'divine right' and our unique place in the cosmos—we are just parasites, being totally dependent on our enviroment.

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* A Brief sketch about the horrors of environmental deterioration and guidelines for better environment

Man and all other animals must have oxygen to live. but in breathing it they convert oxygen into carbon dioxide, on which they cannot survive. Just the breathing of myriads of animals would have long since used up the earth's oxygen supply, if there had not been a source of replenishment These sources are the green plants which take carbon dioxide and give out oxygen during carbon assimilation. More oxygen is provided by the fish in the sea also.

This is just one of the many such perfect cycles — water and nutrient cycles are others — in which man is merely one tiny link in the vast chain of living beings, that are endlessly passing around and reprocessing the same substances for each others's use.

To understand how man is totally dependent on these cycles, one has just to ask oneself how many plants it will take to feed us in our lifetime, and how many more to feed the animals we eat, and how many other plants to produce oxygen for us, animals and insects, and how many insects to pollinate those plants. If only we could visualise this, we would be demanding of the people who are spraying the pesticides and herbicides into the environment, "What are you doing to my plants and insects?"

Conservation Movement

In western countries, the problem of human interference with the environment, apart from the evil done to man by himself, has attained enormous proportions, resulting in "*mass conservation movements.*"

In 1963, when the late President Kennedy delivered a conservation speech in Ashland, it was greeted with yawns. Today, in a matter of months, conservation has emerged forcefully as a potent isssue, under the name of ecology, a term referring to the mutual relationships between environment and life. In the United States, college students are forming *'conservation organisation'* to demand and receive education on environmental aspects. In Florida legislators and scientists recently formed a movement entitled "Conservation '72" to get strong environmental laws.

Ecology is the one major political issue on which any country's opinion may be united. It is as insistent as environmental destruction. The tide of information about pollution has left us no excuse for ignorance about what we have been doing to ourselves. For the first time in history we are being forced to recognise that the earth'saresources are limited. "The politics of environment", says the social anthropologist, Luther Gerlach, "will be the biggest mass movement in the history of any country". Such a movement has already started in the United States.

On October 2, 1969, the people of Hilton head island — an unspoiled land — woke-up to the news that a $ 100 millionchemical plant was going to land on their shores. Before announcing the decision, the company had lined up local and state officials from the Governor downwards. The Company (BASF) even hired the local state representative as its legal counsel. But the residents say. " You might have thought that we'debe overjoyed, but most of us think that it is the worst thing they could have done to us ". A citizens' group was formed and protests began. Scientists, political experts and conservationists came to marshal evidence and developed tactics to fight back, The islanders demanded that the company should furnish a $ 25 million indemnification bond to insure agaist damages from the plant. The company refused this as arbitrary. The people asked the company for a year's construction halt to allow for a study of the plants effect on the area's ecology. The company refused again. Construction might have already started, but the above instance reveals that the people were radical on the issue of conservation.

What are the implications of the militant Ecology movement?

Public protest movements demand that farmers should end the use of nitrate fertilizers, because the drainage of nitrates into the water supply brings about health hazards. Such nitrates are heavily used in some areas – One real crux is that the farmers would be placed in jeopardy. They are economically tied to the high rate of return that fertilizers give them and they would opt out of business if the use of fertilizers is withdrawn.

In our country, where the economy has to be built up from all sides, we invariably contemplate a stepping up of production both from the agricultural and industrial sectors. If factories that are notorious as polluters find it difficult to get sites for plants, if pulp plants are expelled and if power plants, meet with opposition, the entire infrastructure of our progress meets with an insurmountable hurdle.

The real solution for the above problem depends upon how we see and value things. It must ultimately concern itself with the meaning of progress; is it is successful, it must cause man to see himself and his environment as interdependent, not asthe plundering master of his enviroment.

In India, fortunately, the problem of pollution, though existing in its might, has not attained such an enormous magnitude as in the so-called advanced countries of the West; but having felt, observed and studied the gravity of the problem elsewhere, we have to evolve and follow certain guidelines, thereby saving ourselves from a future catastrophe.

Ecological Planning :

This is a fundamentally new approach to environmental problems which includes landscape architecture and regional planning, an ingenious set of analytical techniques, mapping procedures and computer programmes whose aim is to take all the paraphernalia of a growing economy—from highways and sewage plantsto houses and country clubs—and fit them into the environment. The basis of the work is that " Man must work with nature and not against it ".

To quote an example where man is working against nature is pollution of the sea. The pollution of the sea is much more serious than what is actually understood. The villains of the story are not only the ocean - going vessels. but also the industries and municipalities. In all port towns, industrial waste and all rubbish of various sorts are dumped into the sea.

Such pollution results in the formation of a thick film over the surface of the sea through which air and optimum light cannot pass, causing suffocation to fish and other marine life and also the extermination of plant life. The extermination of fish oxygen will pose a serious problem. It is therefore essential that the port authorites, shipping companies, industries and municipalities should make a joint and concerted efforts to stop this atonce.

But we have to have factories, a net-work of roads, power plants, townships and so on. How does ecological planning help to fiind places for them?.

Let us look for a place with the highest ratio of benefits to costs for society as a whole, instead of thinking only in terms of immediate factors like freight rates, construction costs, etc. and attempt to put into equation all the natural and human values.

Take for instance the survey and location of a road. Traditionally the local authorities select a route that gives the best combination of shortness and low constrution cost.

In the same way let us draw a set of maps showing these engineering considerations. But let us also make lists of other questions considered important from the ecological point of view. What would the road be to wild life?. What would the road be to the forest?. What would the road be to ground water, erosion, recreational value, scenic values and so forth.

Apart from survey and perambulation done for constructional aspects, a detailed survey is also conducted for the following consideration.

1) Historic values.
2) Scenic values and forest values.
3) Recreational values.

4) Residential values.
5) Wild life values.
6) Institutional values.
7) Slope.
8) Soil drainage.
9) Surface drainage.
10) Susceptibility to erosion.
11) Bed rock foundation.
12) Soil foundation.

We may prepare transparent maps showing in different shades of grey how the various areas would be affeeted and what the excavation and laying of concrete would do to the groundwater supply ?. A transparent map shaded from least to worst affected areas indicates this. Similarly maps can be drawn for each one of the above items.

We can then superimpose all the maps one on top of another and put them on an illuminated table. And there, shining through the transparencies, could be seen the alignment of lowest 'social cost'. That is where the road will have to be built.

The same technique can be used for planning, the growth of cities and whole regions also.

Economic efficiency:

In terms of economic efficiency it may look costly to give first priority to purely natural values, But the truth is just the opposite, because the proposals are based not on sentiment but on society's own self-interest. Putting our houses with septic tanks on the recharge areas of an underground reservoir, literally defecating our own wells, is pure economic inefficiency, and it shows up in higher costs for water purification and in higher hospital bills. The fact is that there is a place for anything to be built, be it a road, house, steel factory or an airport.

But how to find out the 'right' place in the quickest possible way?

The answer is "with aerial photography, map reading scanners and computer programmes". Basically it is a computerised application of the map overlay method just described.

Once we have got the maps, they can be fed into scanners which road them incredibly fast and store in the computers' memories the potography, geology and all other factors for thhusands of hectares. Once the computer holds all the characteristics we are inrerested in, questions can be asked and they print out shaded maps is seconds.

Conclusion:

This method is only a tool to help make the country better to live in, But to adopt even the most successful such tool while ignoring the overwhelming menace of population growth and the poisoning and destruction of the environment, would be precisely what they are doing on the surface of the sea and building houses on the path of deluge.

We can only provide oabjective measurements of ll the benefits involved as a basis on which the law makers and planners are the the persons to decide.

INDIA IN WORLD SPORT

ASIF ALI KHAN,
1971-73 Course
Sports Secretary
Southern Forest Rangers College.

India's position in world sport today is a dismal one. Ups and downs are a part of life but in the 25 years since Independence there have been more downs in Indian sport than ups. In reckoning India's position in world sports it is the superb performance of India as a Hockey team that comes to one's mind first.

I Hockey

In 1928 India participated in the Olympic Games and emerged as Hockey champions of the world. Until 1956 India was the undisputed world champion nation in hockey. After 37 years of supremacy we had a setback. In 1958 during the Asian Games and in 1960 during the Olympic Games at Rome, India was beaten to second place by Pakistan. In the next Asian Games and in the 1964 Olympic Games at Tokyo we regained our supremacy, but after a few years at the top we fell to third place, first in the 1968 Olympic Games at Mexico, then again in the 1968 World Cup series at Barcelona and recently again in the Munich Olympic Games in 1972. The 1973 World Cup series at Amsterdam is fresh in everyones' minds. In finishing runners-up to Holland, India regained some prestige. Holland, winning the 2nd World Cup on their own soil avenged an old defeat. It was here that Holland had been beaten by India in 1928 by 4 goals. Other nations like West Germany, Holland, Spain and Australia have progressed in their hockey so much that now it is difficult for India as well as for Pakistan to beat them. One reason is that their stamina, power and sense of opportunism is superior.

II Cricket

India's position in world cricket today presents a bright picture. Cricket is popular in only a few countries like England, West, Indies Australia, New Zealand, India, Pakistan, Ceylon; India has played against all the countries. The leadership of Pataudi, who was pitchforked into captaincy after the injury to Nari Contractor in the west Indies in 1962, ushered in a new era in Indian cricket.

India won her first series abroad led by Pataudi against New Zealand in 1968. In the same year New Zealand visited India and squared the series. After Pataudi, Wadekar has proved a lucky and capable captain, winning all the last three series. Under skipper Wadekar in 1970 we won the series 1-0 against the one time world-beating West Indies team led by that great all rounder G· Sobers. Young S.M. Gavaskar made history by scording a century in the 1st innings and a double century in the 2nd innings in the last Test at Kingston. His consistent batting was a feature of the series. In 1971 we won the series against mighty England by 1-0 on their soil. Chandrashekhar was the hero of the series and surprised the thousands of cricket lovers in England by his deadly bowling in the last Test. When England came to India with fresh hopes in 1972-73 under the new leadership of Tony Lewis, India won this series 2-1. Once again Chandrashekhar proved himself a world class bowler.

There does not appear to be much young talent in Indian cricket today as seen by the absence of newcomers.

Wadekar and Engineer are on the verge of being old guards and their services may be limited in future. Chandrashekhar might not prove very effective now on West Indies and Australian wickets. The absence of a genuine fast bowler still dogs the team. It is upto the National Institute of Sports at Patiala to train up fast bowlers and good players and condition them. There must also be a second XI provided with big match practice by being sent on short tours of foreign countries.

III Tennis

Loyola College in Madras has proved a famous tennis nursery. It first produced Ramanathan Krishnan who was ranked among the world class tennis stars. He was one of the world's leading amateur tennis players. In 1959 he was ranked as the world's No.3 amateur. He is also the first (and so far also the last) Indian to have reached the semi-finals at Wimbledon. He made this grade twice in 1960 and 1961. And now, after Ramanathan Krishnan, another 19-year young Indian hope Vijay Amritraj has hit the headlines to refresh memories of Krishnan's halcyon days. The Amritraj brothers made Wimbledon history recently, for it was the first time that three brothers had played in an all-England tournament. Recently at Wimbledon, Vijay lost a keenly fought quarter-final tie against the eventual champion, Jan Kodes. Vijay again showed his class in the U. S. Championships at Forest Hills by defeating no less a player than Rod Laver for a second time. He reached the quarter-finals where maestro Rosewall proved too good for him. Recently in Teheran Asian tennis championship, the youngest brother of the three, Ashok, won the Asian Singles title, India were the champions.

Vijay, whose 'Volvo' success will rank among the memorable sporting events of 1973, has come to stay on top of the game in India. He could well make it to the top in world tennis as well.

One hopes that this young player will some day be a world champion.

IV Football

In soccer India finished fourth in the 1960 Olympics and won the Asian title in 1951 and 1962. From 1960 onwards India found Burma a hard nut to crack. The Burmese are the champions of the last two Asian games. Football particularly 90 minutes play as is the requirement under the International rules, is not conducive to India's hot and humid climate and it saps the vitality of our players. Recently in the Merdeka Football tournament, we played well but could not make the semi-final grade as some players were injured. Playing under floodlights should help our players to have practical experience and conserve energy and to capitalise on their skill and speed to produce better results.

V Wrestling

Wrestlers have traditionally fared well in the Olympics. K. D. Jadhav won our first bronze medal in the 1952 Helsinki Olympics. Wrestling is very popular in India. Dara Singh is still called the free style champion of the world. The 1st Asian wrestling championships were held in New Delhi in 1967, and the 2nd in 1970. Two of our wrestlers, the young Ved Prakash and Hind Kesri Chandgi Ram won gold medals. We could not strike gold at the Munich Olympics. However, Sudesh Kumar and Premnath fared creditably to reach the 4th position. In Russia, Maruthi Mane reached the finals of an International Championship in 1971. In the recent world university games at Moscow Varute got India her only bronze.

VI Boxing

In boxing India has participated in only three Olympics in 1948, 1952 and 1972. At Munich three Indian pugilists started off well. Munuswamy Venu, silver medalist of the 1970 Asian games, missed a medal when he lost on points in the quarter finals being the first Indian to reach that place. Narayanan and Mahtab Singh, both gold medalists at the V Asian boxing championship at Tehran 1971, lost on points at Munich to the eventual winners.

VII Athletics:

In athletics we still bask in the glory of Milkha Singh, the famous "Flying Sikh" who broke the Olympics record by 0.3 seconds in the 400 metres in 1960 at the Rome Olympics and yet finished fourth. His time was 45.6 seconds, a mark which will take a long time for our athletes to attain or beat. Gurbachan Singh could earn only the fifth place in the 110 m. Hurdles at the Tokyo Olympics. His time was 14 seconds.

The Medals Tally

In the Asian and Commonwealth games Indian athletes have won 92 medals (32 gold, 27 silver and 33 bronze). Since 1951 wrestlers have won 54 medals (13 gold, 16 silver, 25 bronze). Since 1954 boxers have won 11 medals 5 gold, 4 silver, 2 bronze). In the Asian games India has maintained her second position in athletics, next only to Japan.

Conclusions

In our country there is no national consciousness either of the importanc of sports or of urgency in organization. Indian sport is wallowing in the duse because of a national attitude of apathy, the indifference of youth, a lack ot interest in schools and lack of coordination between the Indian Olympic Association, the National Sports Federation, the National Institute of Sports, Patiala, the All India council of Sports and the Ministry of Education. There is an all round shortage of playing fields, stadia› standard equipment and funds. The future of sportsmen and coaches is not bright, once they are past their prime.

More reading material on sports and games should be made available in schools, colleges and for the public. Sports and games should be a part of education and physical training. Promising student sportsmen should not feel handicapped while they are participating in games. Outstanding sportsmen should be granted scholarships. Youngsters should be trained and encouraged to play more outdoor games to provide thrill and adventure and to make them more healthy, tough and big-hearted.

The future of Indian sport could be a bright one. One can state confidently that it would not be very long before India becomes a force to reckon with in world sport if steps are taken in the right direction.

Annual Sports in the Southern Forest Rangers College Coimbatore

S. JOHN JOSEPH, I. F. S.,
Officer in-charge, Sports.

The Annual Sports of the College bring out the best competitive spirit among the students. The students look forward to this day eagerly and prepare for it assiduously. To foster and encourage healthy competition and team spirit the students are grouped into 6 houses and Championship cups are awarded to the houses securing maximum number of points in track events and field events separately.

To provide opportunities for all students competition is arranged in a variety of 30 items. This year the response was good and participation was also encouraging and satisfactory.

The sports day was celebrated on 17th February, 1973 after the senior and junior students had returned from their first tour of the year. Heats and selections were commenced from 10th February onwards and the students were taking part in the events of their choice in a sprit of healthy rivalry. A band of dedicated workers under the leadership of D. D. Sharma were found working late at nights cutting papers to make festoons and buntings.

On 17-2-1973 the sports day dawned and the Southern Forest Rangers College Sports field looked like a fairy land. The band of workers had toiled overnight to give a festive look to the campus with welcome arches, streamers, pennants and colourful buntings.

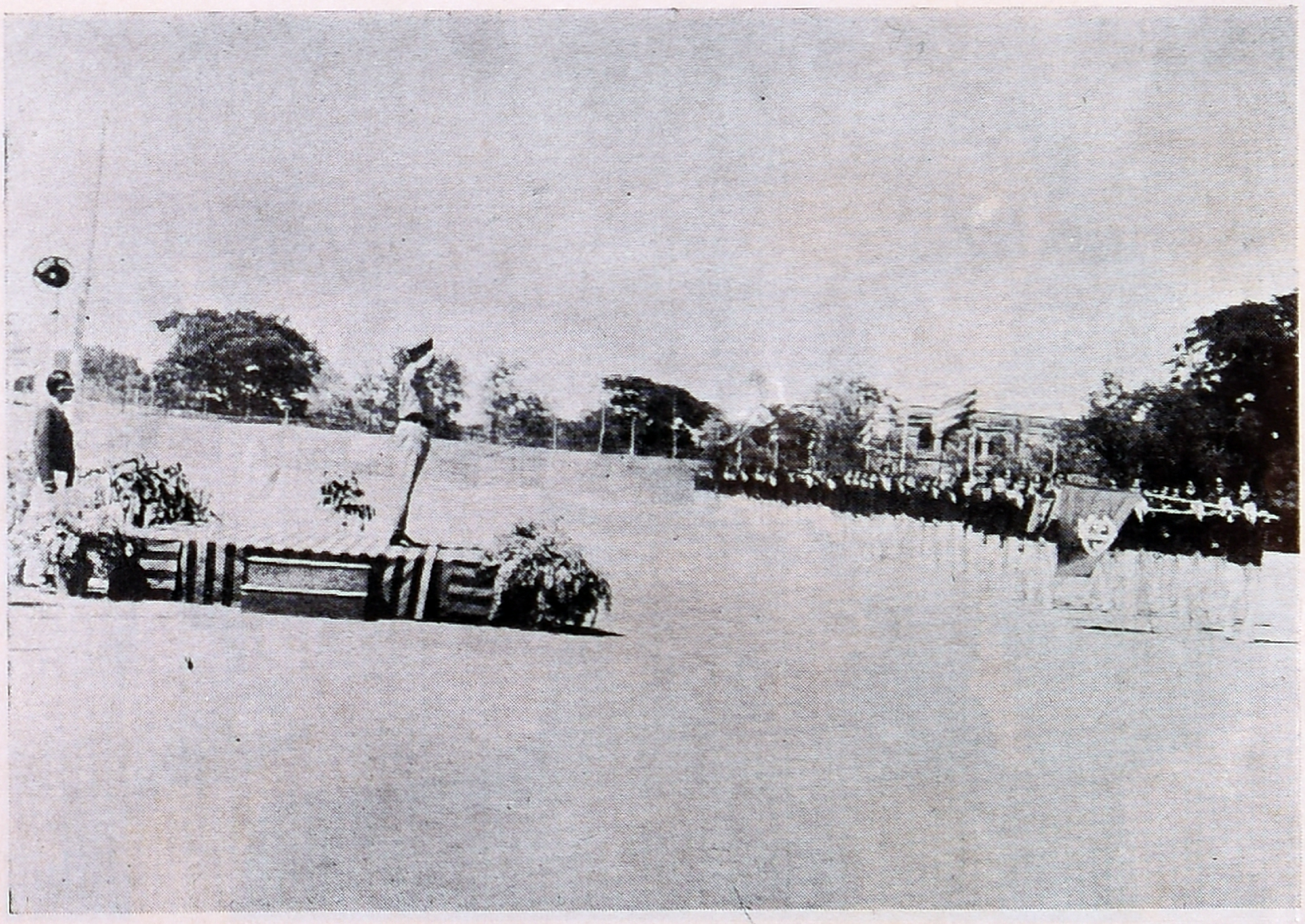
Wing CDR. R. R. RASTOGI. Chief Technical Officer, Sulur Air Force Station was the Chief guest for the afternoon function. He arrived at 2.00 pm., hoisted the Southern Forest Rangers College sports colours and took the salute on the saluting base. The students clad in their attractive dark green blazers and contrasting white trousers marched past the saluting base to the drums and tune of police band led by the student Sports Secretary Asif Ali Khan. It was a very impressive show and drew appreciative remarks from one and all present.

The Sports Secretary gave the oath of fair participation in sports to Wing Commander R. R. Rastogi and the meet was started. The events of the meet were held strictly according to the time. The standard of participating athlets was fairly high. Prior to tea the much awaited Gymkhana event was held. The ladies and gents came forward to participate in this in large numbers. When the event was started the competitive spirit was around in the participants and there was a real stampede to become the winner. The charming Miss Malini Fenn and Miss K. B. Kalyani kept up a lively commentary throughout the meet from the centrally located announcer's booth.

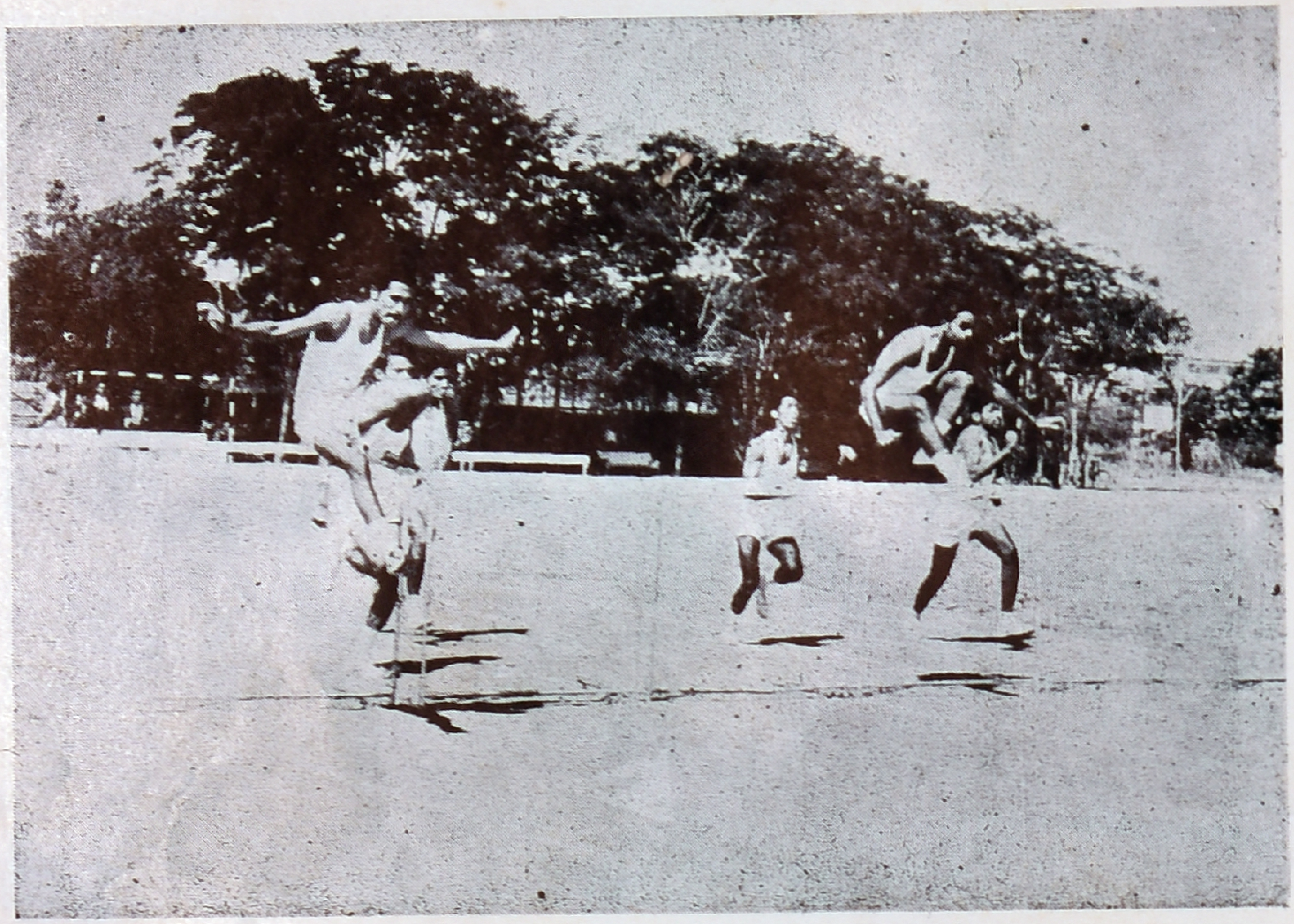
I. P. Kalappa, a student from Mysore was the outstanding athlete and M. S. Balgi also of Mysore was a close second for the award of Individual Championship. Kalappa combining speed and stamina comfortably won 400 M, 800 M races, came second in 200 Metres and also secured the first place in the Shot put and long jump events. M. S. Balgi the sprinter of the college comfortably won the 200 Metres and 110 M, hurdles and long jump and came second in 100 M. and 400 Metres race. The other athletes who distinguished themselves were Balachandra Nair, C. S. Sharma, K. Kandaswamy, N. K. Gupta and Rashid Khan.

There was good response for the fancy dress event and it provided a pleasant interlude during tea. The events came to a close with the exciting 3500 M. Cycle race and gripping tug-of-war.

Officers Sprint



March - Past by Students, Wing. Cdr. R. R. Rastogi, Chief Tech. Officer Air Force, Taking the Salute.



110 Metres Hurdles

Champion Athlete I. P. Kalappa Receiving the Richmond Cup from Smt. Fathima Husain.

Prize distribution was done by Smt. Fathima Husain. The old boys' event was won by Shri Chacko with Shri H. Rajagopal Shetty giving a close fight and getting second place. The Gymkhana event was won by the pair Mrs. Fenn and R. K. Sood. In the officers' event our sprinting Principal gave a close fight to Mr. Jayaraman, Working Plan Officer. The Office staff race was won by M/s. Saravanan and I. Manuel,

The Richmond cup for the Champion athlete was awarded to I. P Kalappa and the Pentathlon Cup was awarded to M. S. Balgi. The Venkateswara Iyer House won the Sankunni Menon's Rolling Cup scoring maximum number of points in the meet. Raghavan house was awarded the Sita Bai Rolling Cup for securing maximum number of points in Track events and Venkateswara Iyer house also snatched the Laungani Rolling Cup for securing maximum number of points in field events.

After the prize distribution the Chief Guest congratulated the winners and complimented the Principal, staff and students of the College for arranging a very pleasant and successful function.

A list of prize winners is given hereunder.

SOUTHERN FOREST RANGERS COLLEGE COIMBATORE

LIST OF PRIZE WINNERS FOR ANNUAL SPORTS DAY 20—2—1972

Sl. No.	Name of events	I Prize awarded to	II Prize awarded to
1.	100 Metres Race	B. Nair	M. S. Balgi
2.	200 Metres Race	M. S. Balgi	I. P. Kalappa
3.	400 Metres Race	I. P. Kalappa	M. S. Balgi
4.	800 Metres Race	I. P. Kalappa	C.S. Sharma
5.	1500 Metres Race	C.S. Sharma	R. Vincent
6.	110 Metres Hurdles	M. S. Balgi	K. C. Chacko
7.	Shot Put	I. P. Kalappa	K. Radhakrishna
8.	Discus Throw	N. K. Gupta	S. V. Naik
9.	Javelin Throw	B. Nair	S. V. Naik
10.	Hammer Throw	K. Kandaswamy	M. D. Nagaraja
11.	Hop Step and Jump	I. P. Kalappa	Radhakrishna
12.	High Jump	N. K. Gupta	S. V. Naik
13.	Long Jump	M. S. Balgi	S. V. Naik
14.	Slow Cycle Race	V. S. Saxena	Rashid Khan
15.	3500 Fast Cycle Race	Rashid Khan	S. N. Gautham
16.	Sack Scrimmage	N. K. Gupta	K. Kandaswamy
17.	Servants' Race	Ramakrishnan	Rajamani
18.	(a) Office staff Race (Fast Cycle Race) Below 40	R. Saravanan	Stanley Jagadees
	(b) Office staff Race (Above 40 years)	I. Manuel	S. K. Krishnaswamy
19.	Gymkhana Event ... 1. Mrs. Fenn & R. K. Sood	2. Miss R. Misquith & Mr. Sunderraj	3. Sq. Lr. Banerji & Mrs. Ramakrishna
20.	Children's Race (Boys) above 10 years	K. Manokaran	Ravikumar
21.	Children's Race (Boys) below 10 years	K. Ramaswamy	D. Selvaraj
22.	Children's Race (Staff)	Jnandev Basuchoudhary	M. Farid III. Premkumar
23.	Children's Race (Girls Race)	Anandageeta	L. Lata III. V. Sudha
24.	Fancy Dress Competition	I. N. P. Biskia	II. S. C. Nagori R. P. Soni III. J. R. Shivahare
25.	Officers' Event (College and F. R. C.)	Mr. Jayaraman	Mr Mohd. Husain
26.	Old Students' Event (Shot Put)	Mr. Chacko	Mr. H. Rajagopal Shetty

Sl. No.	Name af events	I Prize awarded to	II Prize awarded to
27.	Tug-0-War (Inter Dn.)	Senior B Dn. Kandaswamy	Senior A Dn. Abdul Rahman
28.	4 x 100 M. Relay Race - Inter Dn.	Raghavan House – K. Radhakrishna received the prize.	
29.	4 x 100 M - Open Invitation Race	P. S. G. Arts College - A. Shanmugasundaram	
30.	Spl. Prize for Boys - Marathon Race (Prizes awarded in the order of completing the distance.)	I. Prem II. Joy III. Farid IV. Arun [redacted]	
31.	Spl. Prize for Announcer	Miss Malini Fenn & Miss K. B. Kalyani	
32-	Championship – Richmond Cup awarded to	I. P. Kalappa (23 points)	
33.	The Uberoi's Cup for Pentathlon - awarded to	M. S. Balgi (10 points)	
34.	Sankunni Menon's Rolling Cup (Best House in Athletics, track and field events combined) awarded to	Venkateswara Iyer House (42 points) S. C. Nagori received the prize.	
35.	Sita Bai Rolling Cup (for the House securing the maximum number of points in the track) awarded to	Raghavan house (26 Points) K. Radhakrishna received the prize	
36.	Laungani Rolling Cup (for the home Securing the maximum number of points in field events) awarded to	Venkateswara Iyer house (21 points). S. C. Nagori received the prize.	
37.	Spl. Prize for Decoration.	D. D. Sharma, S. V. Mane & Party	

LET'S HAVE A TRY !

P. HAZARATH PEERAN
1972 — '74 Rangers' Course

1✓ He sits between two mats and his qualification is I. C. S. Who is he ?

2. I am a word of two syllables. My first means that which is not old, my second forms a measure. My whole is the name of a famous mathematician Who am I ?

3. My second half is connected with lock, but I really am a denizen of Zoos and open spaces. What am I ?

4. I am the sweet gift of nature, but my name literally means something like water. Wkat am I ?

5. How many sides are there to a typical hollow tree ?

6. A and B are born of the same parents. 'A' is the brother of 'B' bur 'B' is not the brother of 'A'. What relatlon is 'B' to 'A'?

7. I accompany you in your every movement, sometimes I become short and sometimes long, but never vanish altogether. What am I?

8. What is the word that contains seven consonants and a single vowel?

9. What never was, never is, and always will be?

10. Take a four-lettered word for a couple, add 'd' and rearrange to form a word meaning fast.

11. My whole is used by women, but the latter part is used by gentlemen. What am I?

12. Read me forwards and backwards, I am always the same. Behead me and I am the father of mankind, behead me again and I am the mother of a beast behead me again still and I am a verb. My whole is an address to a lady. What am I ?

13. What is it that comes twice in a moment but not once in thousand years ?

14. What is pronounced incorrect even by good scholars ?

15. If to the head of a man you add the tail of a monkey, you will call it as your own. What is it ?

16. My first is in the hive on earth and my second is in the blue on high, my whole you enjoy when you marry. What am I ?

17. I met two persons coming over a bridge. One of them was the father to the other one's son. What relation were they to each other ?

18. My name is of five letters. If you behead me, a bit remains. If you again behead me the bit still remains. If you again behead me yet again still it remains. What am I ?

19. What is the end of everything ?

20. I am an object of worship. If you read backwards, I am an animal. What am I?

21. As long as I live I eat, but when I drink I die. What am I ?

22. What is that which ordinary men always see, kings seldom see and a gop never sees ?

23. It is a word of five letters. Remove the first, it will warm you, remove the next, you can't live without it. Take away the next again, it becomes a preposition. If you don't find this, it will deceive you. What is it ?

24. Why are the letters 'C' and 'S' in the 'cloves', although separated, closely attached ?

25. A letter from S. F. R. C. to N. F. R. C. goes once in a year, twice in a week but never in a month. What letter is it ?

Answers

1. Mat he mat ics
2. New ton
3. Pea cock
4. Rain
5. Two (inside and outside !)
6. Sister
7. Your shadow
8. Strength
9. Tomorrow
10. Paird = Rapid
11. Petticoat
12. Madam
13. The letter 'M' !
14. The word "Incorrect" !
15. My. (M an & Monkey)
16. Honeymoon
17. Husband and wife
18. Habit
19. The letter 'g' !
20. God
21. Fire
22. Equals to themselves
23. Cheat
24. For there is love in between them
25. E

ETHICS OF CRITICISM

Y. VENKATAKRISHNAIAH

1971-73 Course·

Criticism is the art of proper judgement, where as a critic is a skilled person who gives free, frank and fearless comments. He is also considered to be a fault-finder.

Many people often suppress their own instincts of criticism out of a false sense of politeness. They remain silent, fearing that legitimate criticism may reveal a weakness of which the other person may take advantage. Some others are under the mistaken impression that one who complaint is a trouble-maker or a bad-tempered person. By contrast, some may feel that they are worthwhile to other people only when they indulge in criticism. In an intimate relationship when one person suffers as a result of the other's behaviour, often the one who does the damage does not realise what he is doing. Most of us do not want to cause pain. If a friend or colleague belittles us it is our responsibility to tell him and give him an opportunity to show his good faith. The following broad principles can be said to form a basis for the ethics of criticism.

One may observe the following rules of fair criticism :

1. Complain directly to the person causing harm.
2. Do not try to object to your colleague's behaviour in front of someone else.

3. Do not compare the person's behaviour with that of others.
4. State your complaint completely as soon as you can.
5. Do not repeat any point of criticism.
6. Try to make only one complaint at a time.
7. Do not preface your complaint.
8. Do not apologize for making the complaint
9. Avoid words like "always" and "never".
10. If you choose not to complain to the other person at the proper time do not expect him to take your criticism seriously later on.

It is no less important to lay down guidelines for the ethics of receiving criticism.

1. Be quiet while you are being critised and make it clear that you are listening
2. Look directly at the person talking to you.
3. Under no circumstances should you find fault with the person who has just criticised you.
4. Do not create the impression that the other person is destroying your spirit.
5. Do not laugh or speak lightly of the matter.
6. Do not change the subject.
7. Do not try to show that your critic has some hostile motive.
8. Convey to the other person that you have understood his objection.

A good critic must therefore also be ready to accept for criticism sportingly. He should not be touchy about receiving it. He should be able to blend both optimism and pessimism in the sense that when a glass is given to him half filed with milk, as an optimist he must say that the glass is half full, whereas as a pessimist he should also be able to accept others telling him that the glss is half empty. Fair criticism can improve one's life greatly and mould one's character in the proper shape.

BIRD MIGRATION

R. P. SONI
1971-73 Course
Secretary, Wild Life Section.

No resident of India who is moderately observant can fail to notice the great influx of birds during the months from September to November or to remark about their abundance during winter in a place where none were to be seen a couple of months ago. These birds include species eagerly sought after by the man with the gun— snipes, ducks, geese and cranes — together with a host of smaller fry, that interest him less or none at all like the sandpipers, leaf warblers, larks and pipits. Though the transformation is magical enough to be felt by all, it is hard to find even five persons in a hundred who ever stop to ask themselves the question, "What brings this about and how?" To the man in the street, the birds come in this season simply because it is Nature and it is one of the things that they should do. Whence they come is none of his concern while how or why they do it is the birds' own attair !

Landsborough Thomson, an eminent authority, describes bird migration as "changes of habitat periodically recurring and alternating in directions which tend to secure a optimum environmental condition". Many theories have been put forward to explain this. The advatage of migration to birds is self-evident. Movement to tropical latitudes during the winter enables (A) avoidance of cold and stormy climate (B) avoidance of short day light hours in search of food (C) avoidance of those conditions that bring about the searcity of food supply such as water freezing and enshrouding the ground. On the other hand the advantages of high latitudes during summer are (A) availability of good and uncongested nesting territories (B) availability of long daylight hours for search of food when food is most required for the young. (C) availability of abundant food supply after the luxuriant growth of spring vegetation.

Bird migration is itself clouded in mystery. Many spectacular feats are attributed to migrant birds. The swallow that breeds in the British Isles and as far North as the Arctic, winters in South Africa. Flocks of starlings commonly found in British fields are drawn from Russia and other Baltic countries, vastly augmenting the number of British native starlings which oddly enough do not migrate to the south but spend their winters at home. Some of the most common shore birds like the Dunlin and Sanderling which breed in the Tundras of Northern Europe, fly over central Europe on their way to Patagonia and Newzealand. The North American Golden Plover flies direct from the Arctic to South America — a non-stop flight of ten thousand miles right across the Atlantic — while birds of the same species that live on the Pacific coast fly over even greater distances, from Alaska to their wintering grounds in Hawaii. Even the tiny Ruby-throated Humingbird flies right across the Gulf of Mexico, a flight of five hundred miles. The longest known migratory journey is performed twice each year by the Arctic Tern which flies from the Arctic winter south, right across the world, to the Antarctic Summer and back again – a distance of 11,000 miles each way!

Many birds migrate in large flocks, sometimes composed of several species, to their winter homes. A vast majority of them migrate during the night, some both at night aad day while others move only by day. The latter for the most part comprise birds that find their food in the open and feed as they travel like the king bird, Robin, etc. Such other birds as the swallow, Warblers and Mask bird which find their food in the seclusion of trees amidst dense vegetation, migrate entirely at night. It is interesting to note how they avoid hills, trees and buildings on their way. Even more astonishing is the way in which the young ones migrate quite independently of their parents and find their way without any form of guidance, from one end of the earth to the other.

Often they are overtaken by storms and as their plumage becomes soaked they are beaten down to the waves and drowned. Often thousands of birds are killed in a single storm. Of course the vast majority of them sweep on and reach their destination in safety.

The speed and height at which the birds travel are rather difficult to find except for homing pigeons which can be turned from one place to another. Ducks and geese whose conspicuous flocks fly over towns and cities can easily be followed. The championship speed for a homing pigeon was found to be 55 M. P: H. A blue heron has been timed by a motor-cyclist riding directly below it at 35 m. p. h. and a flock of ducks at 47.8 m. p. h. The speeds of smaller birds are usually less although when they mount high up in air and start on their migrating journey they travel much faster than the birds one comes across flying parallel to the railway carriage.

Mention must also be made of altitudinal migration, which is particularly marked among the spcies that live in the mountains. High elevation birds are forced to descend in winter due to the exigencies of weather and the descending snow line. But with the coming of spring the snow melts and the snow line recedes upwards and they return to breed in the higher hills. This is not only confined to high elevation birds but also indulged in by birds living in lower altitudes.

If we step out on a cloudy night when the birds are migrating, leaving their sounds only faintly resembling their day time calls, we can picture to ourselves the thousands of winged travellers returning from a sojourn in the tropics, pushing their way through the dark night, guided by an innate sense to their homes.

We can also think of past ages and especially of the ice age when these creatures were pushed to the South and when the glacier receded only to be forced back once more with the coming winter. Then with the withdrawal of ice, migration by repetition through the ages became a fixed thing with modifications in the location of food supply; many variations developed in the migration route of each species which seem inexplicable today.

Yes, man has got a lot to learn from nature. Every object of nature, whether it be in the sea, air or land has got a lesson for every individual. There must have been this thought in the mind of the poet who sang:

> "Tongues in trees, books in the running brooks
> Sermons in stones and good in everything"
>
> — SHAKESPEARE

Reference

(1) Birds — Lois and Louis Darling.

(2) Animal Ecology — W. H. Dowdeswell.

(3) The Natural History of Mammals — Francois Bourliers.

* * *

"WILD LIFE MANAGEMENT IN MAHARASHTRA STATE"

M. M. KOKATE,
Maharashtra 71-73 Course.

Introduction

wild life in India is in a perilous state today. The problem is to save our fauna from being reduced to a state of disappearnce. Wild life definitely has a number of positive values to offer to man in addition to the aesthetic, cultural and recreational values. It has been recognised that an agricultural farming and pastoral economy flourishes at its best when wild life is present and properly managed.

Scientific wild life management is based on the recognition of the fact that there are inherent biological bases for management. Economic, administrative, political and cultural considerations also play their part. Today scientific wild life management implies conservation and control.

In Maharashtra state, the subject of wild life and game management, as understood and administered in the European countries and the U. S. A. today, is of very recent origin. Until 1953, we had no special legislation and machinery in this respect, as hunting and shooting in what consitituted the reserved and protected forest, were controlled and regulated under the provisions of the I. F. A. 1927. The erstwhile Bombay state had made appreciable headway in enacting the Bombay wild animals and wild birds protection act, 1951, brought into force in 1953 which affords better and adequate provision for the preservation and protection of wild life constituting the animals and birds.

Organisation

With a view to crcate an effective administrative machinery to implement the provisions of the Act and the Rules made thereunder the services of the three important departments of the State Governmet viz. Police, Revenue and Forests, have been coordinated both by appointing Game wardens, Assistant Game wardens and by delegation of powers for the registation of Arms and issue of Game licences. Appointments are controlled and regulated in accordance with the provisions of Section 4 of the Act. So far 81 Game wardens and about 740 Assistant Game wardens, in addition to Honorary Game wardens, have been appointed and vested with powers uder sections 10 and 11 of the Act.

Hunting

Hunting of any wild animal or wild bird is prohibited except under a licence and game has been classified for the purpose, as special Big Game, Big Game, Small Game and Vermin. No licence is required to hunt vermin. Hunting is confined to theclass of game and the number specified therein, subject to the period of closure. The particulars in regard to the game hunted are required to be submitted in the prescribed form not later than 15 days of hunting. The holder of the licence is prohibited to sell the flesh of any game hunted by him. Hunting from or by means of a wheeled or mechanically propelled vehicle is prohibited. The use of nets, snares, pit-falls, poisons or poisoned weapons for hunting is not permissible, except in defence of human life and property. Use of artifical light and hunting during the hours of night is prohibited, except while hunting carnivora on a kill. Burning of vegetation and hunting game over saltlicks, waterholes or drinking places and their approaches or during the closed period is prohibited.

Closed Seasons

In accordance with the provisions of the Act, the period for closure has been specified and the following schedule has been declared as closed.

(1) All wild birds and wild animals listed in schedule II of the Act, except — a) Bustard b) Pink headed duck	Closed time 1st April to 30th September
(2) (a) Black panther (b) cheetah (c) Indian lion (d) Indian wild Ass. (3) (e) Brew anthered deer (f) Pigmy hog (g) Bustard (h) Pink headed duck (i) Pea-fowl (j) White winged duck.	Whole year (i. e. totally protected)

Dealing in Trophies and Pets (Section 33)

Business of a trophy dealer or dealer in pets can be carried on, only under and inaccordance with the trophy dealers‘ licence or pet dealers’ licence under the provisions of this Act. The terms and conditions of carrying on the business of trophy dealers or dealers in pets are specified in the licence which is valid for one year and can be suspended or cancelled before the said period. A Trophy dealer or dealer in pots is required to maintain a record and submit returns in the prescribed form to the wild life preservation officer every fortnight.

A wild life Preservation Officer may issue a certificate of ownership to any person who in his opinion is in lawful possession of a trophy.

Powers and Penalties

Officers empowered under the Act, on suspicion, can demand an inspection and can seize, if necessary, any animal, bird, meat, trophy, licence or permit, togther with any vehicle, weapon, trap or tools, used for committing an offence. They can enter and search premises, lands, vehicle, or boats, baggage or the possessions of a suspected offender. They have also the power to arrest, Courts take cognizance of the offences on a complaint or report from an officer authorised for the purpose under the Act. The prosecution has to be instituted within three months of the date of alleged offence. The penalty on conviction is imprisonment upto six months and/or fine upto Rs. 500/. The animal, bird, meat, trophy or any weapon or trap is liable to be confiscated in addition to cancellation of the licence or permit held by the offender. Provision exists, however, for compounding the offence by an officer of a rank not below that of a conservator of forests on recovery of the value of the seized property in addition to compensation. When a case is compounded all the seized property is returned to the offender on payment of the value of compensation and no prosecution is then instituted.

Sanctuaries and National Parks:

Sanctuaries and national parks wherein killing of wild life is totally prohibited, offer valuable possibilities for the rehabilitation of species threatened with extinction. One cannot enter these, except under a permit and in accordance with the conditions of the permit. One is not allowed to carry any arms or weapons in such sanctuaries in any case.

We have in Maharashtra, the Taroba National Park and the Radhanagari Bison Sanctuary.

The Taroba National Park is situated in Chanda District and covers an area of about 45.59 miles. The wild life therein has received complete protection. The fauna includes cheetal, Sambar, bison, tiger, Panther, wild boar, bear and wilddog. There are a number of crocodiles in the Taroba lake. The park is manned by a park officer and his Assistants. A jeep with a driver has been specially provided for showing visitors round the park. Two resthouses are located in the sanctuary to provide accommodation. Game can be observed also from watch towers specially constructed for the purpose in the sanctuary.

The Bison Sanctuary at Radanagari is situated in Kolhapur District. It covers an area of 4845 acres It formed previously the Game preserve of H. H. the Maharaja of Kolhapur, who has in the interest of wild life given up his shooting rights. Bisons are found in large number in this sanctuary.

In many states, a hunting licence entitles you to onedeer and no more just like a marriage licence!

* * *

Manmade Forests in the Future of Forestry

M. S. BALGI
1971—'73 S. F. R. C. Course,

Is it right to say that without man-made forests there is no future for forestry ?

Though it is a subject of controversy it is an undisputed fact that the majority of forest officers agree with the above sentiment. The concept of classical conservation is gradually being replaced by that of dynamic forestry.

To contradict this, we may resort to a familiar device: statistics. If we glance at the total forest area and compare it with that of manmade forests, the latter is hardly 1.5% of the former. This has been achieved in a period of not less than 20 years since our dynamic forestry came into existance. Will it be possible to convert the rest of the area in a reasonable period of time? How much money and effort will this consume?

Our forest policy says that 33% of the total land area should be under tree cover. We have only 22% now. From where is the rest of the area to be obtained ? It is by these artificially raised plantations in denuded areas that we are restocking our forests. Artificial forests are not raised by cutting down all natural stands. Only the required portion of the forests is cut down to raise plantations. Due allowance is given to the catchment and other protection values of forests,

We shall now discuss the role of industry in forestry. One of my friends once asked me, "Why should we cut our forests to the requirement of the industry like making shoes to fit the feet. Why should they not choose the required size from our stock ?" He meant that the forest department should not depend on industry but that industry should depend upon forests. I too agree with this. But to stretch the analogy further, are there enough shoes in our stores of the specific size required by industry ? Not much of our bulk stock is useful. All our attention should now be diverted towards converting this mere bulk into useful raw material. Only then can we improve financially. Every one knows that wood as a finished product is losing ground on the market. But on the other hand wood as a source of cellulose has conquered completely new territories. We have nothing like the quantity of wood needed. to meet these demands. It is here that we should pursue our man-made plantations.

When the question of a guarantee comes up it has to be accepted that there is no such guarantee forthcoming from industrialists. Tomorrow a synthetic product may replace wood as D. D. T. has replaced pyrethrum, an insecticide extracted from *Crysanthemum cinerarifolium*. To offset such possibilities leases are made on a long term basis. Moreover the rotation period in modern forestry isr short (e. g. *Eucalyptus*, *Acacia mearnsii*) providing an opportunity to switch over to other species, rejecting any that may lose demand. One species might meet the demands of not one but several industries e. g. *Eucalyptus* is used for pulp, oil fuel.

The role of manmade forests needs no elaboration. Many industies from paper to tanning depend upon raw material from forests. Several valuable species like Eucalyptus, Bursera and Wattles are now established in India due to their artificial plantations. To what extent forests have served industry can be seen at Dandeli, where the industry has taken upon itself the task of raising plantations to meet its demand. With such a move on the one hand, would it be wise to be conservative on our part ?.

Let us consider the hazards of land without tree cover. Places like Chambal, Agra, Jambalmedu in Tamil Nadu, are completely unfit for cultivation. Absence of tree cover changed these lands from fertile areas to deserts. We cannot expect any sort of natural tree cover and revenu in such places. Continuous degradation for the last few hundreds of years has rendered these areas unfit for cultivation. No one can envy the fate of the people residing around such areas. The water table has gone very low in such areas. Violent wind lift the soil every now and then. It will not be possible to check this without artificial plantations. We have achieved some succes in Jambalmedu and in some parts ofAgra and are getting some revenue too.

Though substantially beneficial, man-made forests have their harmful affects too on the eco-system. There are many perils of monoculture. The natural balance gets disturbed. Wild animals will be upset physically and psychologically. Vulnerability to attack by insects and pests is also increased. But we cannot keep quiet considering these factors. We have to sacrifice something to attain the quality of progress achieved by developed countries. Efforts can be made to counteract these ill effects. In some places mixed crops can be raised to avoid monoculture. Wild animals are given full protection in sanctuaries and national parks.

Forestry in India is still in its infant stage. A major portion of our population is quite ignorant of the benefits direct and indirect - derived from forests. The general tendency of the people is to look forward to revenue and economics. Due to growing demands of land for economic land uses, a forester finds it extremely difficult to preserve the forest land under the tree cover. This is because we are not in a position to justify the economic equivalence of natural forest with respect to other land uses. To some extent this can be justified by our long-yielding plantations like Bursera, Rubber, etc.

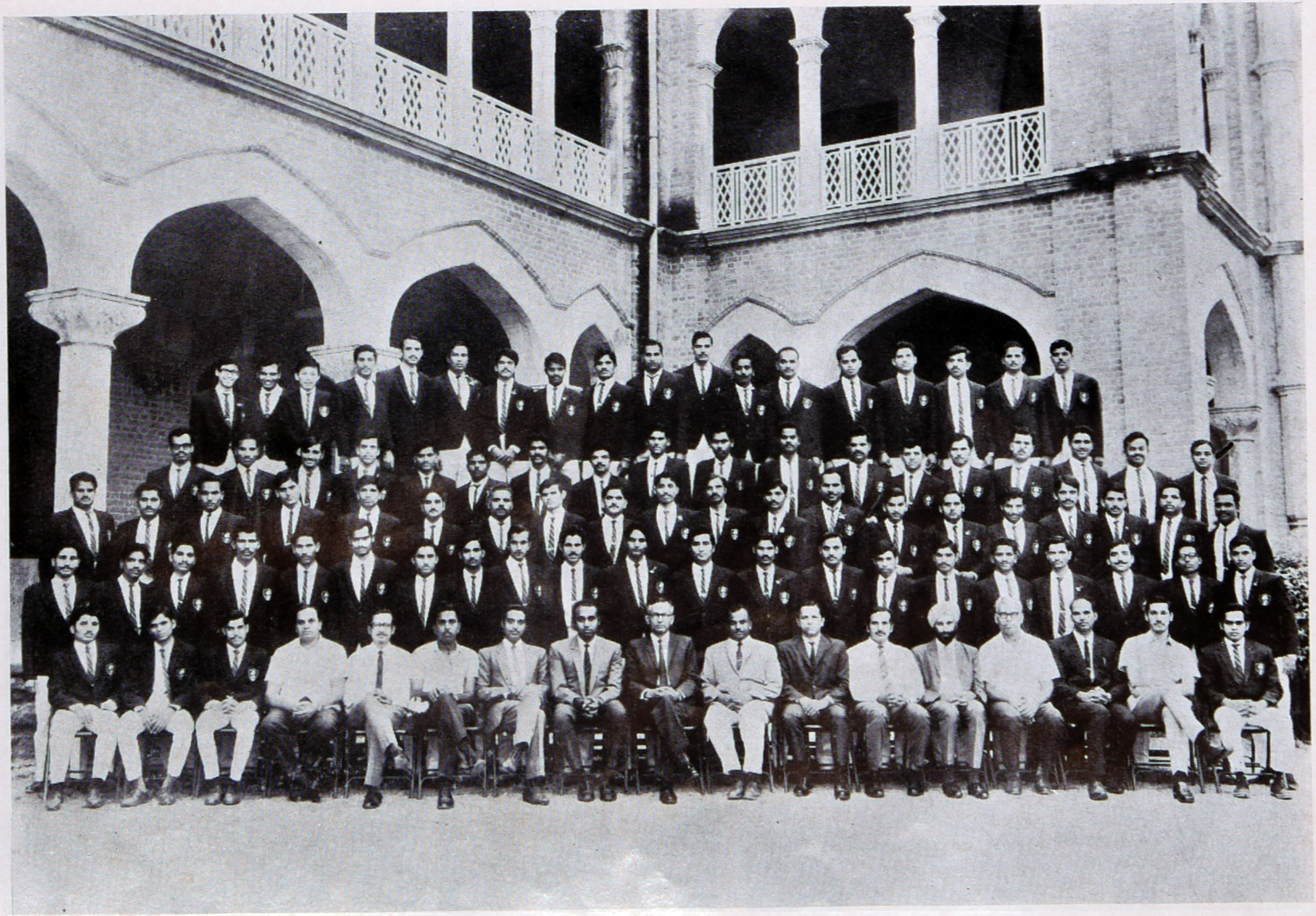
ALUMNI CORNER

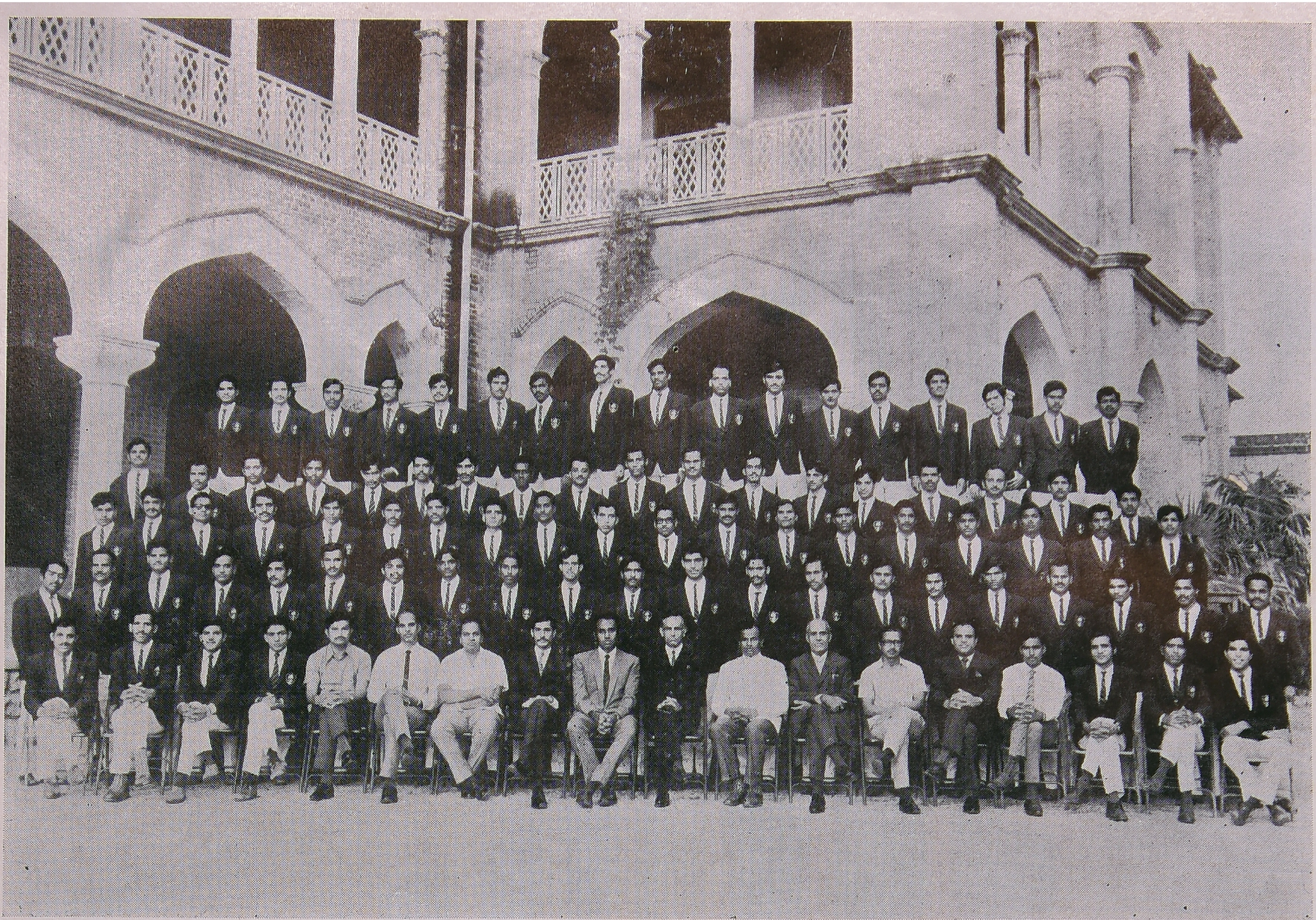
Editor's Note

It is gratifying to note the increased response to our appeal in this column last year. We have consequently been able to prepare a much more exhaustive "Alumni Corner" this year. However, as may be seen, this has been achieved partly by delving deeper into the past. Contacts made on tours have also helped a great deal. We renew our appeal to the recently enrolled Associate Members to give us information about themselves and other alumni and to make it lively, so that the Alumni corner need not become a mere dreary chronicle of who is where ! The cherished bonds and memories that we wrote of last year are, if anything, strengthened by the passage of time. We look forward to a steady flow of news to help us in our task. We also hope the old boys will remit the concessional rate of Rs. 3/- and ask for their copies of the magazine.

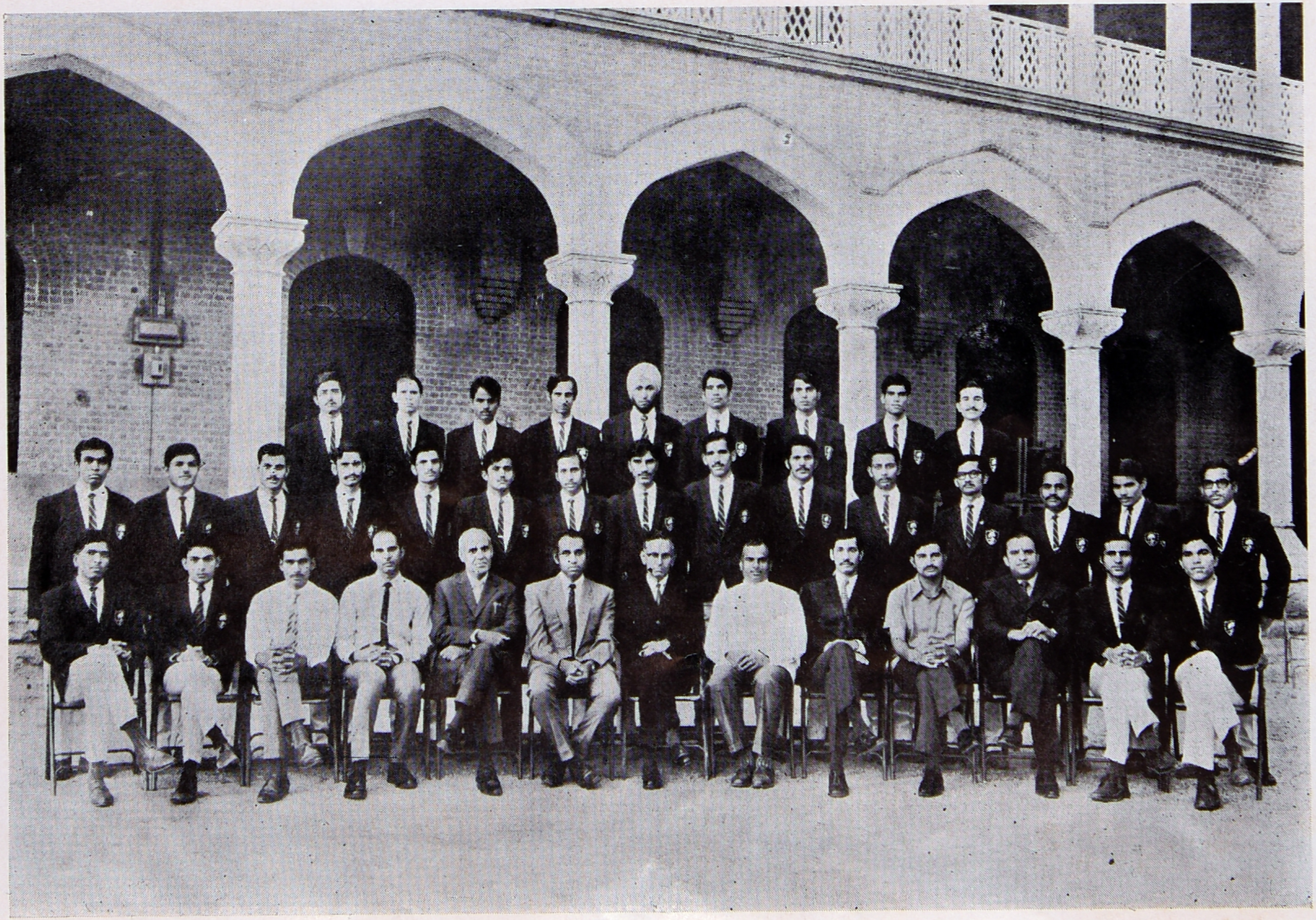
1948 – 50 Y. M. Ranga Rao is Forest Utilisation Officer at Hyderabad. K. Vijaya Rao is Assistant Conservator of Forests, Karimnagar East Division. K. L. N. Reddy is Assistant Conservator of Forests at Hyderabad.

1949 – 51 V. R. Krishnan Nair, whom we at Southern Forest Rangers College fondly remember as a member of the instructional staff, is Reader in Forestry, Calicut University. We are sure students of forestry in this University have benifited greatly by his zeal and experience. P. M. Abraham is in charge of the Teak Plantation and Wild Life Sanctuary divisions at Parambikulam. H. Rajagopala Shetty left Southern Forest Rangers College only a few months ago and is

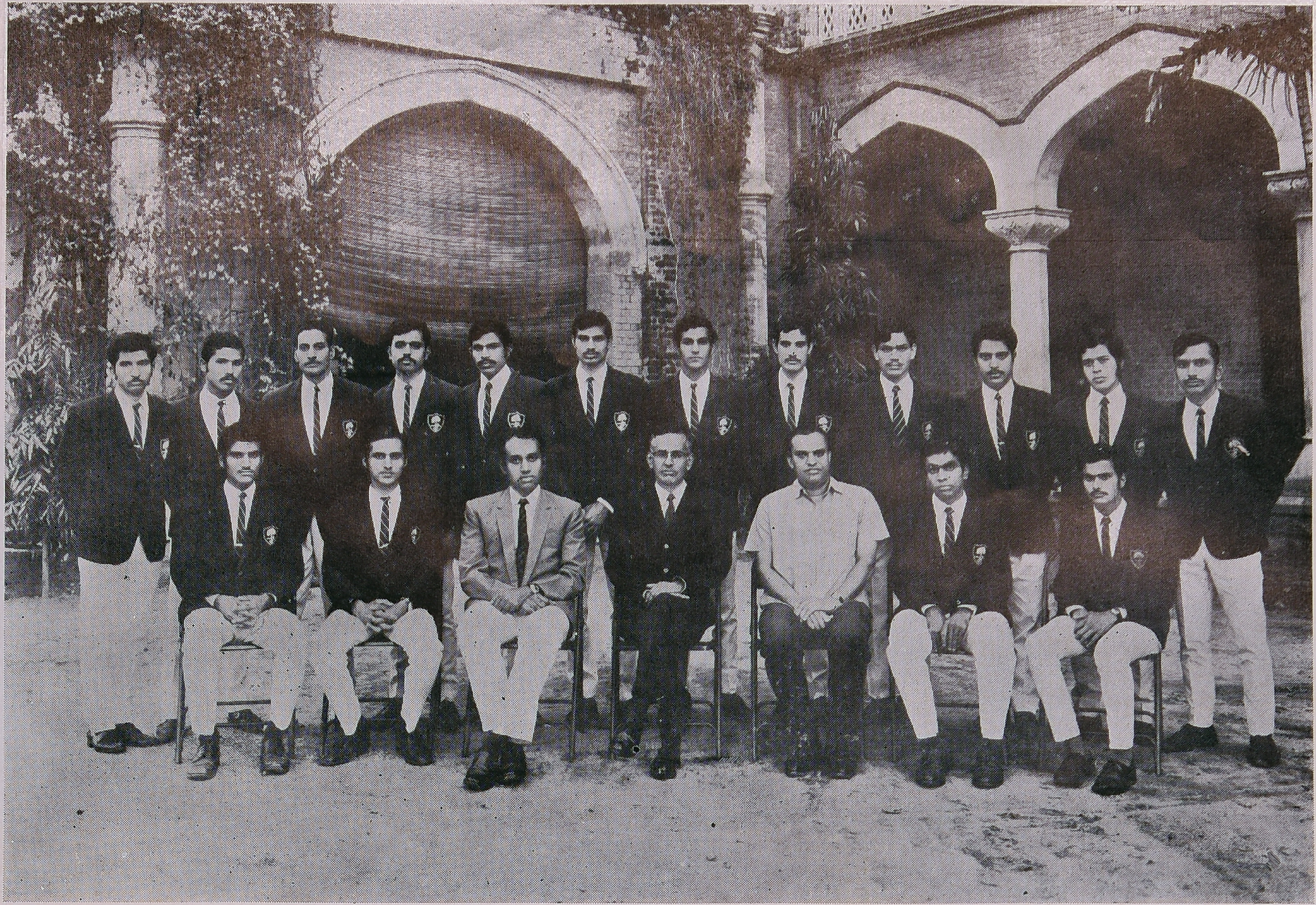




S. F. R. C. 1971—'73 RANGERS' COURSE.



OFFICE - BEARERS OF THE S. E. R. C. ASSOCIATION 1973.



S. F. R. C. TEAM CAPTAINS — 1973.

now in charge of the Resources Survey division at Madras. We retain warm and fresh memories of his long and fruitful stay with us, and are sure that his many students and colleagues will do likewise. K. R. Rajagopalan is in charge of the Resources Survey Division at Madurai. As a former member of the college instructional staff, he may be pleased to know that his lecture notes on Soil Conservation and Accounts and Procedure continue to be followed, making him an "evergreen" with the students!

1950 – '52 B. Venkatanarayana is Assistant Conservator of Forests, State Trading Beedi leaves Circle at Hyderabad. D. Manik Prabhu is Assistant Conservator of Forests at Nizamabad. C. Damodara Reddy is an Assistant Conservator of Forests and is undergoing the refresher's training course at Dehra Dun. Srinivasa Sarma is at Periyakulam as Divisional Forest Officier, Vaigai Soil Conservation scheme. A Thamburaj is in charge of one of the rubber divisions at Nagercoil.

1951 - '53 T. C. Ramakrishna is with us at Southern Forest Rangers College, as he has been for some time now, and is doing very well. Allam Raju Reddy is Assistant Conservator of Forests at Hyderabad. K. Ramakrishna is Assistant Conservator of Forests, Nirmal M. K. Narayan Nair is Assistant Conservator of Forests, Silvicultural Research division at Trichur. M. Radhakrishnan is Assistant Forest Utilisation Officer. M. V. Balakrishnan is General Manager, Forest Industries of Travancore Ltd at Alwaye. T. Yuvaraj is Assistant Conservator of Forests, Special Mobile patrol Party at Coimbatore and lives very near us. M. P. Karuppiah is Assistant Conservator of Forests, Bamboo supplies, at Pallipalayam. Velayudhan Nair is in charge of a rubber division at Nagercoil.

1952-'54 : One can hardly belive that T. Rajamannar has left the College as he did only about a couple of months ago. We hear he is posted to Karimnagar, not too far from Hyderabad. Memories of him are so fresh that the corridors still seem to resound with his lectures! His many students and celleagues will remember him with affection and wish him well in his future life. S. Devarajulu is now Divisional Forest Officer, Mettur Soil Conservation scheme at Salem . He is remembered by students as the founder of the impressive museum at the Vaigai Dam Forestry Training school. The present principal of this training school is V. Subbiah. We recall with pleasure our meeting with him during his previous posting as Assistant Conservator of Forests, Sathyamagalam. T. V. Shiva Rao is Assistant Conservator of Forests, Special MobilePatrol Party at Trichy. K. Nanu Nair is the Wild Life Preservation Officer at Thekkady and it was a pleasure meeting him at Periyar on tour. We recall with gratitude his guiding us around the sanctuary with his deep and unassuming knowledge.

1953-'55': C. Chandrasekharan has gone on to win many fresh laurels, which will not surprise those already familiar with his achievements After securing the A. I. F. C. Diploma with Honours and entering the I. F. S-, he has recently obtained a dectorate in Forest Economics from an American University. His Viva voce examination was conducted over wireless through satellite transmission with the student in Bombay and the Examiners' Board in America a few months ago. He is at Trivandrum as Deputy Conservator of Forests, Vigilance and Evaluation. Incidentally Mrs. Chandrasekharan is the daughter of P. N. Adiyodi, I. F. S. (Southern Forest Rangers College 1946—'48 Batch) now Divisional Forest Officer at Palghat. so that one can look forward to an abiding interest in forest from their children! Nachimuthu is at Salem as Assistant Conservator of Forests, Special Mobile Patrol Party; Nallathambi is Assistant Conservator of Forests at Kodaikanal and Manasseh is at Madurai as Instructor in the Soil Conservation Training Centre.

1954—'56 K. J. Joseph went on to obtain the A. I. F. C. diploma and then entered the I. F. S. He is now at Trivandrum as Personal Assistant to the Chief Conservator of Forests. Sreedharan Nair is Assistant Forest Utilization Officer at Trivandrum. E. K. Kurien is Divisional Forest Officer, Rubber Plantation Division at Punalur. Abraham Varghese is undergoing the Assistant Conservator's Refresher course at Dehra Dun. M. Ibrahim kutty is Assistant Conservator of Forests at Idikki.

1956—'58 C. K. Karunakaran, now in the I. F. S. is Divisional Forest Officer, Kottayam. Babuji A. George is Depot Officer, Chalayan Depot at Kozhikode and K. G. George is at Thodupuzha. K. M. Kuttayya has joined us. We welcome him in our midst and look forward to his many-sided talents that include cricket and hockey. He has already established himself as a consistent hitter of fours!

1957—'59 N. Vasudevan Nair is at Cherambadi in the Government Tea Project following his promotion as Assistant Conservator of Forests. Johnson has undergone training in wildlife conservation at Dehra Dun and it was nice meeting him at Chilla in the Siwaliks, a place that is gaining importance as the habitat of wildlife experts! Samraj is on study leave for his ph. D.

1958–'60 P. Vijayaraghavan, who later got his A. I. F. C. diploma, is Assistant Conservator of Forests, Rubber plantations at Punalur, C. S. Nair, who is at Peechi has revealed literary talents that have brought him much distinction. His novel "Kattileku Oru Theerthayatra" was prescribed as the non-detailed text for the pre-degree class of the Kerala University. Another work of his, "Kadinte Katha", has won the Central Sahitya Akademic award. One cannot but feel a glow of vicarious pride at his achievements! A. Packiam is Assistant Conservator of Forests, Mobile Party at Madurai. We recall with pleasure our meeting with him at Tiruchendur, while on tour. S. Balakathiresan is Assistant Conservator of Forests, Bamboo Project at Sathyamangalam. M. H. Venkatasubramaniam is at Dharmapuri as Assistant Conservaror of Forests, Mobile party.

1959–'61 Joseph K. Kurien is President of the Kerala Rangers' Association at Kottayam. Sundaresan is R. O. at Parambikulam. P. Balakrishnan is in charge of Mettupalayam range. Kaliappan is in the Tea Project at Cherambadi and it was pleasant meeting him on tour. Dharmarajan is at Yercaud, a mini hill station near Salem, enforcing the Hill Preservation Act. S. O. A. Khader is at Madurai as Instructor, Soil Conservation training centre. John Thomas is in Thenmala range and was kind enough to spend quite some time with the classes on tour to ensure that their camp proved useful and comfortable.

1960–'62 Chalama Reddy is going ahead of the jet age, doing research in computer technology somewhere in the U. S. A. Subbaraghaviah is R. O at Rampacholavaram in Kakinada division. Vasudevamoorthy is in Vinukonda range of Guntur division. T. V. Narayana is at Nandyal as R. O. P. K. Zachariah joined us about a year ago as Assistant Instructor. We welcome him. Two of his erstwhile instructors whom we met in recent months recalled his musical talents and we have found, to our delight, that he retains them. He also has a positive flair for organising entertainment programmes, a talent which is bound to stand him in good stead here as a member of the instructional staff. P. Alivikutty is R. O at Parambikulam. C. K. Anthony is at Begur. C. J. Paul is Range Officer at Olavakkot. One recalls with pleasure meeting him at Nilambur in January iast year. Somaroy is attached to the office of the Chief Conservator of Forests at Trivandrum, where we met him briefly in March.

Kushalappa, I. F. S., is Divisional Forest Officer at Bhadravathi. R. H. Palanna is Divisional Forest Officer at Sullia for a rubber division. Balakrishna is Range Forest Officer, Working Plans at Mysore. Prabhakar is in Kakkanbote range. If we remember right, this is the forest hallowed for it's "khedda" operations. M. Nagavarma is in Bangalore range. M. V. Waddia is Range Forest Officer in Belgaum division and J. H. Khan is Range Forest Officer in Gulbarga division. Y. Sivasundaram is in Tarikere range of Bhadravathi division. E. M. Thimmaraju is Range Forest Officer in the State Silviculturist's division at Bangalore. C. K. Devalingaiah is in Balehonnur range of Chikmagalur division.

K. Marimuthu, remembered for his political aspirations, is in Shervaroys North range of Salem division. Venkatasubban, with whom we had a pleasant meeting at Cumbum while on tour, is now in the holy island that is tenuously linked with the mainland — Rameswaram. Nagarajan is in Bolampatti range, very near us. Chandran and Balasubramaniam are in the Govt. Tea Project at Kotagiri. It was pleasant meeting them there on our Saturday excursions.

1961-'63: Harinatha Rao is Forest Range Officer in Srikakulam division. Jayaraman is in Kakinada division. T. K. Raghavan Nair is attached to the office of the Chief Conservator of Forests at Trivandrum as Assistant Conservator of Forests. Govindankutty later obtained his A I. F. C. diploma and is now Divisional Forest Officer at Tellicherry. Sadasivam is at Walayar as Instructor in the Kerala Foresters' Training school. T. K. Kauri is at Dandeli as Range Forest Officer. Our senior students recall meeting him with pleasure. V. Sathya Paul is Range Forest Officer at the Pilot Demonstration Centre, Chennapatna. Santhagunam is at Kodaikanal in charge of one of the wattie plantation ranges.

1962-'64 S. B. Shetty is now in Surat Circle after a spell of deputation to Dadra and Nagar Haveli. S. N. Rajagopal is in Heggadadevanakkotte range of Mysore division. Chinnaswamy is R. F. O. attached to the Silviculturist at Bangalore. We heard Kamal Pasha was bound for Mecca on a pilgrimage.

1963–'65 Gopal Pujari is Range Forest Officer at Tittimathi Research range in Coorg. K. C. Muddayya is R. F. O. at the Sullia rubber plantations. N. Srinivasa is yet another R. F. O. attached to the Silviculturist at Bangalore. Syed Mustafa, whose physique is said to have reached impressive proportions, is in Chingleput range. Sambasivam who recently completed a course of training in soil conservation, is in Padugais range of Trichy Division.

1964 - 66 Ch. Muralidhara Rao, I. F. S., is in charge of Rajampet division. M. G. Vinekar is at Dandeli as Instructor in the Forestry Training School. Sai Meera Baba is in the Anchetty range, one of the few rangers in Tamilnadu that has a forest atmosphere about it. Dharmaraj Victor is in Polur range and Yamaraja in Hosur range. Jebadurai is at Vellore in a plantation (Eucalyptus) range. Joseph Jogindranath, whom we met at Kodaikanal, is now in Cumbum range. Quite a change for him. Ramachandran is in Tirupattur range, obviously maintaining the volume-age pattern! Chennakesavan is at Dharmapuri doing soil conservation work.

1965–'67 C. E. V. Prasada Reddy is Range Officer at Vishakapatnam. Ghouse Mohideen is in one of the coffee plantation ranges of Anakapalli division. P. A. Abraham has joined us at Southern Forest Rangers College as Assistant Instructor. We welcome him and wish him luck. P. Mohd. Kutty is in Karulai range, a range well-known to every S. F. R. C. student. Udhayarajan is in Achankoil range. K. D. Krishnan Chettiar is at Ariankavu, another place well-known to our students for its' association with stump and stem analysis! N. G. Narayanan is in Vadakka range and M. S. Joy at Ayyappankoil.

1966–'68 It was with much pleasure that we met several alumni of this batch from Mysore during the Seniors' camp at Bangalore. S. R. Gopalakrishna in Devanahalli range took the class round the Koramangala eucalyptus plantations. Ramaiah who met the class at Mandi Hills, is in Chikballapur range. He took considerable pains to make the excursion to Nandi Hills instructive and enjoyable. K. Ganapathi Prabhu in Gottipura Research range accompanied the Silviculturist when he conducted the class on its tour of research activities. All of them have fond memories of their alma mater. Iqbal Ahmed is in Lakkavalli range. Byakodi is in Nagargoli range of Belgaum division. V.S. Ramamoorthy is in one of the plantation sub division ranges at Bangalore. S. G. Dayananda is in Kollegal range.

P. Krishnan Nair is now back within the campus as Instructor, logging Centre. Gurunathan was at the Vaigai Dam Training school M Ramamurthy is in Dharmapuri range. M. P. Ramaswamy is in Morappur range and Palaniswamy in Denkanikotta range. That makes three batchmates in one district! Vaidyanathan is at Vridhachalam. It was pleasant meeting him on tour. K. S. Krishnan is in Farm Forestry, Vellore. V. K. Vadivelu is at Sathyamangalam and must have been one of the first rangers the present juniors met in the course of their baptism in touring! M. M. A Mashady is in Araku research range. C. T. Sivasankaran Nair, now in the I. F. S. and Divisional Forest Officer at Trichur, has so to speak, married into the professson. His wife is the daughter of Mr. P. Narayanan Nair, retired Conservator of Forests. P. P. John is at Ughadal and T. M. Mathew is an Thunakkadavu range. P. N. Banot is R. F.O., Pedigundam range of Allapalli division. The class recalls with pleasure meeting him on tour.

1967–'69 Manjunath is at Bangalore in the Flying Squad, One presumes he finds it more adventurous than Devanahalli! Rengasamy is in Kolar divisionl Saranabasappa is at Bangalore in working plans. Aravindakshan, who ably explained the nursery technique of *Pinus* to seniors on their Ooty tour, has descended from Pykara to Mudumalai. Jagannathan is in Sathanur. Rahamath Ali is in Palacode range. Sreedharan is in one of the wildlife rangers at Mudumalai. Sankaralingam who recently completed his training in logging at Dehra Dun, is at the Vaigai Dam Forestry Training school as Instructor. K. J. Philip is in the Flying Spuad at Ranni.

1968 – '70 Noor Ahmed, remembered here for his tennis (there has hardly been a real tennis player among the students since then) is in the coffee plantations of Anakapalli division. Taquiuddin, the singer-cum-orator, is at the Indian Forest College undergoing training to be an Assistant Conservator of Forests. D. K. Deshpande is Range Forest Officier at Malegaon in Nasik Circel.

S. B. Gupta is Range Forest Officer at Aurangabad. Ramappa is in the rubber plantations of Aivarnadu division, Sullia. M. B. Srinivasa is in Chennigiri range and M. N. Srinivasamoorthy in Punjur range. C. A. Devaraj is Range Forest Officer, Sambrani range. Gopalakrishna is, presumably, utilizing his resources of organizational talent more intensively than last year in his present posting in Ramnagar range. We suppose their experience in working plans is standing them in good stead. M. M. Husain is Range Forest Officer in Kolar division, Varadarajan is in the Govt. Tea Project ~~at~~ Cherambadi. Chinnaswamy continues at Ooty as Research Range Officer. It was a pleasure meeting him on tour. Periasamy is in Saidapet research range and is probably kept quite busy though one finds it difficult to associate Saidapet with forestry! Palanisamy is in the Govt. Rubber Plantations. Deepalingam continues at Kotagiri and is now experienced in taking Saturday excursion batches from the college around the tea plantations! It was a pleasant surprise running into Sankaran at the Govt. Timber Depot at Nagercoil.

1969–71 K. K. Sharma is in a soil conservation range in Mungawali district, having been transferred from Mandla. We wonder how far he has progressed in his campaign to resemble PremChopra of the Hindi screen! We were very pleased to hear from A Dubey last Deeember when he was in Nainpur, warmly sriggesting a trip to Kanha as K. K Sharma had done earlier. It is, in a way, a feather in their caps that their suggestion has materialised. Samant married reecntly. Potey and he are said to be still at Allapalli. Rakhe is doing well in Tarubanda range in Melghat. Birari, in Amaravatai Circle, has also married recently as has V. G. Patil who is at Dhulia in Nasik Circle. Beera Moideen is at Kolar in a Soil Conservation range. Krishnakumar is an Instructor in the Forest Guards' training school. Ravoof, whose interest in the magazine we recall with much pleasure, has married recently and is still in Kalsa range. Maddodi and Nagaraja are in Working Plans at Mysore. Rengasamy is in working plans at Bangalore (does Bangalore have the distinction of having more rangers than any other state capital we wonder) and M. N. Sanu is in the Sullia rubber plantations. Does he get a chance to play hockey? Noor Mohd. is at Nellialam in the Tea Project. Krishnamoorthy continues in Kannivadi range and Chandran in his native Ooty.

1970–72 Bose is in the saw mill division at Rajamundri. We would like to know what scope he has there to display his eloquence. Madpuwar is at

Chanda, probably renewing acquaintances. Saraf, whom we will always remember for his unique method of "felling" saplings while carrying out mechanical thinning, is at Nanded in Aurangabad Circle. Pawar, often remembered for his stylish yet reliable batsmanship, is at Rajura That fine singer Mateen is at Allapalli along with Nimbarte, Deshmukh, Birje and Gaikwad. We hear they have acquired some skill in the art of fire-fighting, thanks to that best of all teachers: sheer experience! Shahoo, Mehere and Maldhure are in Amaraoti Circle. Ali Ahmed who got married recently, is in the Plantation Development Corporation and continues to aim at the I. F. S. target. D. K. Khaladkar was said to have been doing wildlife census work at Borivili along with Sankpal, Shaha and Rode. We would be interested to know more about their exploits. Kharote is at Nizampur and has married recently. It was with much pleasure that we heard recently from N. N. Janbandhu at Koba in Melghat, one of the areas included in Project Tiger. He recalls the college with warmth and affection. Betule is in Chanda Circle doing road construction work. Sounds like a battle of contours — the road's and his! Momin is at Kalwan in Nasik division. We would be glad to know how he is getting on with his tennis, singing and other varied interests!

M. M. Patel is at Silvassa in Dadra and Nagar Haveli as Flying Squad R. F. O. Cum Excise Inspector. He has also got married recently. He seems to be leading altogether an exciting life! B. O. Shah is in working plans at Junagadh (near Gir). We suppose he has been "lionised" to his heart's content now! Shaikh is also at Junagadh as Research R. O. Tomar, remembered for his musical and dramatic talents, is in Raghogarh range. It was pleasant hearing from him when he was at Shahdol. We hear he is likely to marry soon. Tripathi is at Shahdol and expecting to be married soon. Vyas is also at Shahdol. Kalia, S. R. Singh, Dixit, Bhattacharya and R. K. Sharma are at the State Forest Research Centre, Jabalpur and it has been pleasant hearing from them. We would like to know what scope they have to develop their talents. R. K. Sharma is remembered for his effective acting and organisation of Hindi Plays. We feel like organising a trip to Jabalpur, of only to see him on the stage. Gite is doing resources survey work at Jagdalpur. H. O. Sharma, remembered for his quiet sincerity, is also doing resources survey work along with M. A. Ali at Bastar. We hope M. A. Ali has become a serious minded person. R. K. Mishra is undergoing logging training at Dehra Dun. We presume he keeps in touch with nockey. Tiwari, Kaushal and Harishchandra are at Raipur and are doing well. Manager Singh is teaching at the Forest Guards School, Rewa.

Shettigar, Ananda Gowda, Sanu, U. H. Mohd and Prabodha are at the Rubber plantations, Sullia. K. R. Shetty is at Puthur planting Cocoa. Sivalingaiah is in working plans at Shimoga and Macha is at Dandeli in the Plantation Corporation. The senior students recall with pleasure their meeting him while on tour. Purushothama is in Working Plans, Belgaum Circcle. Tipshetti is at Sirsi as R. F. O., Plantation Corporation. Ramakrishnaiah is in Working Plans, Mysore. Dase Gowda is in Kunaigal Range, Tumkur division. Chikkaraju is in the Bandipur Wildlife Sanctuary and Mutgi in the Belgaum Forest Corporation. We would welcome more news about these alumni from Mysore, their experiences and exploits and their reactions to regular service.

Ramu is in Korakundah Range. Unnikrishnan is in the Rubber plantations. Belliemuthan is in his native Nilgiris in the Tea Project at Cherambadi. Raveendranathan is in the Rubber plantations. We recall with pleasure meeting him in the rubber factory at Keeriparai where he explained the grading and marketing of processed rubber. Ganesan, remembered for his vivid acting, is in Denkanikotta Research range. We hear he was seen some time ago in an unlikely but romantic locale: the Brindavan gardens! We presume he was trying to do his bit to promote inter-state integration. We wish him well in whatever acting he undertakes - After all, isn't all the world a stage! Subbian has taken to teaching, in the Forestry training school at Vaigai Dam. Doraiswamy, who married recently, is in the rubber plantations. M. Raman is in Gandamanur plantation range. We remember seeing him in Nagercoil in March, though perhaps he may not recall it. Singaravelu is also in rubber. In the emerald isle of Srilanka. Anandarajah is at Kandy as Forestry Adviser, Crop Diversification Corpoation, Edirisooriya is Assistant Instructor in the Sri Lanka Forest College, China Bay. Wijesooriya is Range Officer at Kamburupitiya and Piyasiri is Range Forest Offier at Puttalam, We look forward to hearing from them.

LEAVES FROM THE COLLEGE DIARY 1972-'73

28—10—72 Celebrated Wild Life Day. Group Capt. J. S. Sodhi, Commandant, Air Force Administrative College, presided. Speakers on the occasion included Mr. K. K. Nair, I. F. S., Chief Conservator of Forests, Kerala, who gave an inspiring speech. Educational institutions presented an entertaining programme. Mrs. Sodhi distributed the prizes.

29—10—72 Officers of the Southern Forest Rangers College and Forest Research Centre bade farewell to the outgoing senior students of the 1970-72 course.

31—10—72 The juniors (1971-73 course) gave a dinner to bid farewell to their seniors.

1—11—72 Annual Convocation held to mark the successful completion of training by the 1970-72 Rangers' Course. Prof. Sher Singh, Union Minister of State for Food and Agriculture, presided. The 1972-74 Rangers' course commenced.

17—11—72 Shri C. T. Bopayya, Assistant Instructor was relieved on reversion to his parent state of Mysore. Shri P. K. Zachariah from Kerala joined the college as Assistant Instructor.

From 1—11—72 to 30—11—72 the 1971–73 Rangers' course had their annual vacation.

23—12—72 Annual Marathon race held. Won by R. Vincent of 1972–74 course.

24—12—72 We won our 'C' division league cricket match against Coimbatore Cotton Mills by six wickets.

31—12—72 We won another 'C' division league cricket match, this time by 39 runs against Mansfield C. C.

Other events of December, 1972. Election of office-bearers of the students' Association and welcome dinner by seniors (1971–73 course) to the new juniors (1972–74 course).

8—1—73 Seniors left on their first tour (Goa, Dandeli, Makut, Mysore, Nilambur camps).

10—1—73 Juniors left on their first tour (Sadivayal and Bannari camps).

25—1—73 Juniors returned from tour.

26—1—73 College celebrated Republic Day.

A notable event of the last week of January was the staging of the Tamil Nadu Hard Court Tennis Championships, which were held on our courts. This tournament featured the finest of our players. Top stars who took part were Vijay Amritraj, Krishnan, Jaideep Mukerjea, Anand Amritraj, Chiradeep Mukerjea, Ashok Amritraj, Goswami, Gaurav Misra and others.

1—2—73 Seniors returned from tour.

17—2—73 Sports Day. Wg. Cdr. R. R. Rastogi presided. Smt. Fatima Husain distributed the prizes. I. P. Kalappa of Mysore won the championship very narrowly from M. S. Balgi, also Mysore.

1—3—73 Seniors left for Ootacamund (road engineering tour).

4—3—73 Juniors left on their second tour with camps at Thenmala, Asaripallam, Lower Camp and Kodaikanal.

13—3—73	Seniors returned from Ooty tour.
15—3—73	Seniors left on North India tour. Camps : Hyderabad, Allapalli, Nagri, Agra, Dehra Dun.
31—3—73	Juniors returned from tour.
12—4—73	Prof. S. D. Richardson visited the college. In Dehra Dun, our seniors on tour defeated the N. F. R. C. in a volleyball match and drew with them in a hockey match
20—4—73	Seniors returned from tour
24—4—73	Juniors left on their third tour for Topslip. Here they underwent the practical examination in Survey. They were also taken on forestry excursions and a field exercise in Orienteering was also conducted.
9—5—73	Juniors returned from third tour
10—5—73 to 27—5—73	Mid-term vacation
7—6—73	We won a friendly hockey match against ateam from the Navy, 6-0
19—6—73	U K Parashar (1971—'73 course) won the Fischer Cup for Tennis singles against the tennis captain V. Lakshman Rao (1971—'73 course) in a keenly-contested, three-set match
21—6—73	M. S. Balgi and Saghir Ahmed won the tennis doubles against V. L. Rao and S. V. Naik

In June we also bade farewell to Shri H. Rajagopala Shetty, Assistant Instructor, on his reversion to Tamil Nadu and welcomed Shri H. M. Gidwani, I F S, from Goa who joined as Instructor

28—6—73 to 6—7—73	Final examinations for Seniors in Utilisation, Protection, Accounts and Procedure and Wildlife management and for juniors in Utilisation, Survey, Soil Science, Physiography and Geology
2—7—73	Shri P. A. Abraham (Kerala) joined as Assistant Instructor.

8—7—73 Seniors left on final tour for Bangalore for a study of field Engineering at the M. E. G. campus and forestry excursions around Bangalore

9—7—73 Juniors left on their final tour – camps at Arimalam, Neyveli, Rameswaram

27—7—73 Juniors returned from tour

1—8—73 Seniors returned from tour

7—8—73 We won a friendly match in hockey against P. S. G. Arts,4-0

10—8—73 Shri T. Rajamannar, Assistant Instructor was relieved on reversion to his parent state of Andhra Pradesh, Shri K. M. Kuttaya from Mysore joined as Assistant Instructor. Later in the month the students gave a dinner to welcome Shri Kuttaya and Shri P. A. Abraham and to bid farewell to Shri Rajamannar

15—8—73 Celebrated Independence Day. Table tennis finals were held. N. K. Gupta won the singles beating Rashid Khan. N. K. Gupta and Rashid Khan won the doubles against A. A. Khan and U. K. Parashar. A friendly cricket match was held between the Principal's team and the House Tutor's team. Most of the college staff members and several officers of the F. R. C. participated. Much unsuspected talent was unearthed in the course of the match !

16—8—73 Annual Quiz competition was held. Winning team: S. V. Naik, M. Gopalakrishnan, C. S. Sharma and U. K. Parashar. Carroms and Chess finals were held. C. M. Ahmed won the carroms singles. Rashid Khan was the runner up. C. M. Ahmed and K. Radhakrishna won the carroms doubles against Asif Ali Khan and Rashid Khan. A. K. Chaturvedi won the chess final against A. Guha.

17—8—73 Annual music competition was held. Kurtkoti and Seshadri won the first and second prizes respectively for vocal music U. K. Parashar and S. V. Naik were the outstanding instrumentalists.

20—8—73	Annual Elocution competition was held. S. C. Mukhopadhyaya won the first prize, followed by Gbondo and V. L. Rao. Badminton finals were held. H. K. Dave won the singles against U. S. Saxena, H. K. Dave and R. P. Soni won the doubles against S. V. Naik and M. S. Balgi.
23—8—73	Won a friendly match in football against Tamilnadu Agricultural University.
24—8—73	Celebrated Association Day.
4—9—73	Won a hockey match 2–0 against Tamilnadu Agricultural University.
9—9—73	Won a friendly match in cricket against the Agricultural University by six wickets.
12—9—73	Won a football match against G. C. T.
18—9—73	Won a hockey league match against Stanes Club, 1–0.
20—9—73	Inter-collegiate Elocution competition on wildlife was held. There was good response.
21—9—73	Inter-collegiate Elocution competition on wildlife was held. M. Manoharan (P. S. G. Arts) won the First Prize. S. Sithanathan (Tamilnadu Agricultural University) won the second prize. Consolation prizes were won by Miss M. Pathmasini (Home Science College) and V. S. Pathak (S. F. R. C.).
23—9—73	We won our 'C' Division League Cricket match against Indian Oil Corporation by the comfortable margin of six wickets. S. V. Naik distinguished himself by an outstanding bowling performance, taking 8 wickets for 17 runs.
29—9—73	Entered hockey league semi-finals defeating Govt. Arts College 1–0.
30—9—73	Won our second cricket league fixture against Pykara cricket club by 4 wickets.
8—10—73	Final examinations commenced for Seniors.
11—10—73	Final examinations commenced for Juniors.

Mechanization in Forestry

ANANT D. NIKAM, B. Sc. (Ag.)
1971—'73 S. F. R. C. Course

This is an age when commercial jet planes travel at 1300 k. m. per hour, computers calculate in billionths of a second, earth movers scoop up 75 m^8 loads and automobiles cruise at 160 km p. h. We have put a man on the moon. It is incongruous that in such an age forestry can long remain essentially immobilized. The development of controllable high power sources has been the key to the advancement of other technologies and production processes. It is one of the major keys to the success of man's programme of scientific advancement. The development of high-powered jet engine has thrust aviation ahead at a remarkable rate.

Forestry and Economy

There likely to be a gap between the supply of and the demand for wood in the future. It is only logical and economic to close this gap by increasing production, so long as production costs are less than the selling prize of wood. The future importance of forestry to the world economy, therefore, depends to a large extent upon the ability of foresters to keep the costs of producting wood below those of producing alternative materials. This will be achieved by rationalizing work and, particularly, by mechanizing forestry operations.

At the present time forestry is behind agriculture and a long way behind industry in mechanization. There are several reasons for this. First of all, forestry is practised under a wide range of geographic and climatic conditions with correspondingly varying composition and structure of forestsy.

There is an old saying that power corrupts, but it does not apply here to mechanical power where perhaps the reverse is true ! Mechanization brings a way of life which is generally beneficial and even though some restraints are added which affect the worker, heavy physical labour is eliminated.

It is generally accepted that technological process is essential to sustain and increase economic growth in a dynamic economy and that such growth is basic to the creation of adequate employment opportunities for a growing labour force. Within the circle of technology is the circle of mechanization, a specific kind of change in prdouction technique. It involves the application of machinery to tasks formerly performed human or animal labour.

Need for mechanization

India is a developing country; even 25 years of independence have not brought fruitful results. Forestry until recently was considered a mere preservation of tree growth. Apart from local needs of fuel, small timber and grazing, productive forestry as such did not exist.

The contribution of forests to the national economy is almost negligible. In Scandinavian countries, forests countribute as much as 25% of the gross revenue. It has been pointed out repeatedly that we are having only 22% of the total land area under forests and not 33% as decided by the forest policy, but what have forests given to the nation? How and why can we expect national importance when our growing stock is only 28 cu.m^{1} per hectare, compared to 80 cu. m. which is the world average? The main cause of this poor return is delayed operations. We are taught in every forest institution that timely operations are the keys to success but how far are we practising it?

Our main labour force is drawn from villages. We are always in need of them during the monsoons, when most of them are engaged at the same time in agricultural work in the villages. Every year we have to minimise our targets or cover up the areas haphazardly and late in the monsoon, the results of which are unsuccessful plantations. In addition, most of the harvested stock from the forest remains at the site of harvest due to the lack or inadequancy of quick transport for which we depend mainly on outsiders. The untransported harvest deteriorates and becomes valueless, with the additional risk of posing a fire hazard.

In my opinion mechanization is the only solution to make our forestry dynamic. Here I do not mean complete mechanization as there are various degrees of mechanization. Six technical and four economical levels of mechanization are defined by Brunet, who describes traditional working with man and animal power as *ecotechnic;* the mechanization of particular conventional phases of the logging process as *paleotechnic* and the integrated mechanization of the whole logging operations as *neotechnic.* The degree of mechanization is described by Brunet as the relationship between machine cost and total production cost.

Scope of mechanization

The scope of mechanization can be discussed under the following heads.

Preparatory operations — These operations include clearing the area, uprooting the stumps and ploughing. Most forest areas are inaccessible to manual or animal labour. Uprootal for instance takes days to complete with manual labour but can be done by a bulldozer in a few days. Further clearing and uprootal can be done side by side.

As regards ploughing, most of our forest land is hard and compact, not having been ploughed so far. So it is almost impossible to plough the area below 4″ depth with a pair of bullocks. Tractors can plough the area in less time and to a desirable depth of 9″ to 12″. It has also been observed that tractor ploughed areas of Eucalyptus in Arimalam have given 6—8 tonnes more yield per acre. Clearly, tractors are preferable to bullocks under such conditions.

Felling

Felling is the first logging operation. We still use axes for felling in most of the states. The saw is little used and power chain saws are not even thought of! States in possession of power chain saws seem to use them only for periodic demonstrations to Forest College students! The usual reasons put forth are lack of physically fit operators and non-availability of spare parts like floating carburettors and so on. The efficiency of power chain saws is known to all of us. In India also we can well use them in Industrial plantations of Eucalyptus and Wattle. Once operations are started on a large scale, maintenance will not be difficult as we will be able to import the spare parts and can later even manufacture them. A few modern machines which are used in western countries are briefly described below:

The Beloit - Hiabob harvester does all operations like felling, topping, branching and bunching. This truckmounted unit grips standing trees and shears the branches, top and butt hydraulically.

The Busch combine is a mobile unit used for felling, trimming and cutting into pulpwood lengths at the stump. The tree monkey is a west German approach to the limbing problem and consists of a power chain saw fitted to a small carriage which climbs, delimcs and descends tree stems. This is automatic.

Extraction

Extraction can be divided into skidding, where a mobile unit travels to the stump to assemble logs and skid them to the roadside and yarding where a stationary prime mover using cables assembles logs at a central land.

Skidding: Elephants and camels are still widely used in plantations for skidding and are still by far the best and most economical for small thinnings with logs upto 15 cu. ft., and on slopes of 20° or more. However, their working day is short (approximately half that of a man) and they are efficient only over fairly short distances. The main disadvantages are their reduced working hours and maintenance which is difficult in states where elephants are not common.

The track-laying tractor is very versatile because of the wide range of accessories with which it can be fitted, particularly the earth-moving blade and logging winch. They are unsurpassed where all phases of logging and construction need to be done with one unit, besides being able to operate on most kinds of terrain and soil. Attachment of a logging winch and trailing arch greatly increases their range, load pulling capacity. Rubber-tyred tractors that are readily available and less costly can be used for skidding in fairly good terrain; fairly long distances are covered if a trolley is used.

Loading equipment

Selfloading truck-mounted loaders are popular in many countries. They are mobile, as they go with the truck to any part of the forest to load small amounts as required. Loading cranes are also used. Hand loading may still be the most economic method if production is very low.

Transport

Our transport is almost completely mechanised consisting mainly of trucks. Tractors can be used inside the forests upto jungle depots It works out cheap if the department owns the tractor and other equipments.

In Allapalli (Maharashtra) the Mechanized logging unit is a success though the degree of mechanization is low.

Maintenance of equipments, repairs

This is the most important aspect of mechanization. Without good management, success in mechanization can be achieved We require trajned labour to operate, supervise and carry out the work. Only our own workshops can solve the maintenance problem. Quick servicing and repairs can only be possible if workshops are departmentally owned.

With mechanization must come discipline in work. The steady pattern of a day's work, the weeks' and the years', which is accepted for the most part by a worker in a developed economy, is often repugnant and strange to a forest worker who is used to working at his own pace, often intermittently, and is used to a degree, a relatively free man.

The greatest stumbling block to progressive mechanisation in forestry is the fear of unemployment. This fear is not reasonable as we do not engage local labour for the whole year. Forest labour is mainly seasonal and utilizes agricultural workers who have steady and ample work in cultivated fields. Moreover complete mechanization is not contemplated.

With the introdutcion of increased mechanization in forest industry will come profound changes with regard to the labour force involved. The changes are of many kinds and will have far reaching effects.

Karl Marx himself wrote that social relations are closely bound up with production forces. In acquiring new productive forces, men change their mode of production, they change their way of earning a living they change all their social relations.

One effect of mechanization in the forest will be the change from relatively free men working for themselves with comparatively little supervision to a team of steadily occupied wage earners whose wages will be linked to output.

With the trend now towards total mechanization, in which the worker, are machine operators and the machines for the most part are multifunctional, there are bound to be changes. Using an analogy from agriculture, the results of large-scale, highly mechanized harvesting, ploughing and soil treatment properly carried out do not indicate any lessening of soil fertility; if anything the opposite. There is no reason to believe that the same will not be true in the forests. The type of operarion will change; individual care and knowledge of specific sites may be lost as mass methods are applied but the costs involved may well permit a higher standard of silviculture and utlisation than is practised at present. It is not possible at this time to state what silvicultural methods will prove desirable. Total mechanization, with its capacity to produce full trees, tree lengths, shortwood or chips by means of a series of different machines should permit great flexibility in the treatment of any forest.

Mechanization must be done if forest-based industries are to remain competitive with other industries in terms of costs or products and wage attractiveness to workers. This mechanization must be accomplished through a systematic approach designed to obtain the maximum profit per unit volume harvested while safeguarding the requirements of labour, forest production, soil, water and recreation. No matter how efficiently a mechanized system operates, it is of little use if its functioning can be prevented because of lack of labour, incompatibility with silvicultural requirements or conflicts with other values.

Logging Practice — A Must To Foresters

V. LAKSHMAN RAO

(1971—73 S. F. R. C. Course)

What has a forester who is expected to grow and tend trees to do with the felling of trees? As a matter of fact, many an Indian forester may wonder why one should learn the methods of felling of trees and how training in basic logging leads to the development of our economy. In fact, a forester who is expected to conserve forest resources cannot overestimate the importance of logging. Age-old logging practices have, surprisingly, resulted in a staggering wastage of wood in India. Obviously, rescuing the timber during harvest should naturally be at least as important as the growing of trees over a century or more.

It is during the post-war period that the term "Logging" came to be used universally to denote timber harvesting in forestry practices all over the world.

It is estimated that about 6 million cubic metres of timber are wasted annually in felling of trees and conversion of logs. Of this, 20% would account for unavoidable wastage due to the need to leave some stump height for hammer marks. The remaining 80% is avoidable wasage which in terms of money would not be less than Rs. 50 crores. India still imports large quantities of timber, pulp and paper annually. Even if half the wastage of wood in the country is avoided by scientific logging and better transport, we will have avoided the unfortunate dependence of the country on foreign imports of wood and wood products. This would be no mean achievement and scientific logging, therefore, deserves our keen and immediate attention.

Another important aspect of logging as a part of Silviculture is the ecnomics of plantations, Take, for example, All India IV Quality Teak. At the age of 70, which is the normal rotation: the number of stems would be 315 and the yield of stem timber and small wood is 85m^3 per hectare. The total stem timber and small wood from thinnings would be 60m^3 per hectare. If we use even the basic logging tools available in the country and adopt scientific methods of exploitation, we can save on a very conservative estimate 10% of the marked timber. This means we have 6m3 of timber in the intermediate yield of thinnings and 8.5m^3 of timber in the final yield per hectare.

In India, at present man-made forests account for over 10,00,000 hec. At the rate of Rs. 1,000/- per hectare for the successful formation of plantation the total cost of formation would be Rs. 100 crores. Considering that 10% of wood can be saved by scientific logging and therefore 10% of the plantation targets could be reduced, we could save Rs. 10 crores on the creation of man-made forests. It is clear, therefore, that correct planning of forestry depends to no small extent on the logging practices.

The logging methods followed in Eastern Canada are

(1) Short wood method where the tree is cut into logs at site.

(2) Tree length method where only the lops and tops are removed and the delimbed tree is transported as one piece to the consuming centre.

(3) Full tree method where the entire tree is felled with everything in tact and transported to the processing unit.

Short wood method is the traditional method of logging practised in all countries. Though only this method has been widely adopted for logging in India, mechanised logging was attempted soon after the First World War and again after the Second World War. Machines were used only for hauling and transport but not for felling the trees. Winches, cable cranes, ropeways and tractors were all utilized according to terrain and general topography, to haul the logs and transport them to the aecessible plains. A knowledge of basic logging was lacking and the technical knowhow for the maintenance and operation of sophisticated equipment was totally absent. Procurement from the foreign countries of replacements was difficult and there was no awareness of proper logging techniques in the country. The result was all round disappointment and reversion to the traditional methods.

Various foreign experts were invited to India from time to tlme to advise foresters and forest contractors on improved methods of logging- Dr. Herber, a Swiss expert, visited the country in 1952 and stressed the need to have better communications and introduced, for the first time, a skyline cable crane in Himalayas. A. Koroleff visited the Himalayan forests in 1955 and recommended the application of aerial wire-skidding of wood. H. G. Winkleman, a Swiss officer, was invited in 1958 to review the entire question of scientific logging in the country and for the first time, a logging training centre was established at Batote in Jammu and Kashmir state. This centre imparted training in the use and maintenance of mechanical equipment and propagated the idea of basic logging throughout the country. But the results have not always been encouraging. In importing the equipment from highly advanced countries local conditions were not properly appreciated and the lack of trained technicians and other personnel was not seriously considered. Even now, the craze for mechanization has not abated. We have been very enthusiastic about buying power-driven cable cranes and chain saws.

To spread the concept of basic logging throughout the country and to mechanise logging operations to the optimum degree consistant with Indian conditions, a logging Training Project has been established by Government of India in collaboration with the Food and Agriculture Organisation of the United Nations.

The various centres imparting training are

1. Dehra Dun ... i) Planning and Efficiency.
   ii) Basic logging.
   iii) Tractors and trucks.

2. Coimbatore	...	Basic Logging.
3. Chandrapur	...	i) Basic Logging. ii) Saw Mills.
4. Sukna	...	Basic Logging.
5. Kulu	...	Cable ways.

The training in basic logging is meant mainly to train logging instructors who in turn train forest workers in various states. Here are some suggestions to tackle this vast problem.

1. Mere training of Instructors in basic logging or giving each of them a set of logging tools will not solve the problem. In India more than 95% timber extraction is done through private agency. It is the forest contractor and his loggers who should know sound logging methods and use appropriate tools.

2. A scheme of heavy subsidies should be formulated to establish at least three logging units in each state.

3. Encouragement to private enterprises to manufacture improved logging tools should be given by effecting bulk purchases.

4. When once the basic logging tools are available in bulk with the Government of India, it should be made incumbent on the contractors to buy some sets as a precondition to the confirmation of sales.

5. Opening of one or two Logging Schools in each state where the contractors' agents and supervisors can get a short training.

6. Some educational films should be supplied by the Government of India on logging techniques and advantages and distributed to State Forest departments for propaganda and publicity.

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A Threat to the Mudumalai Wild-Life Sanctuary

V. PASUPATHIRAJ
1971—'73 Course

Situation and Approach

Mudumalai Wild Life Sanctuary, the pride of Tamilnadu, is situated about 65 km. from Ootacamund adjoining the Bandipur Wild Life Sanctuary of Mysore state, touching the Kerala border in the west. It is considered one of the best sanctuaries in India. Visitors from all over the world come in large numbers to the sanctuary to see, study and enjoy the wealth and variety of it's flora and fauna. The nearness of the sanctuary to the famous hill station Ooty and its easy approach through the Ooty-Mysore road attracts devotees of nature and elevates its fame to a higher degree than that of other sanctuaries.

Amenities to visitors

Mudumalai sanctuary is managed by the Tamilnadu Forest Department. The department has provided rest hauses with all facilities. It also maintains an elephant camp inside the sanctuary. The elephants trained here are used for riding inside the sanctuary. The local forest officials and tribals, who have an intimate knowledge of the flora and fauna, guide the visitors enabling them to participate in one of life's simplest yet most satisfying pleasures : the thrill and excitement at the sight of wild animals in their natural habitat. To enable visitors to view and study wild animals with case and comfort, tree - top machans and watch towers have been built in suitable places amidst natural surroundings overlooking saltlicks and waterholes frequented by wild animals. Minibuses are available to go around the sanctuary.

Wildlife :

The sanctuary, which is 124 sq. miles in extent, shelters a variety of fanual populations typical of the peninsular moist deciduous forests. The carnivores are represented by the tiger, panther, wild dogs, jackal, hyaena, jungle cat, ratel civets and mongoose The predators are largely nocturnal and therefore one cannot be certain of seeing them, but panthers and wild dogs may be seen with average luck.

Among herbivores one can see with certainty and ease herds of elephant, gaur and spotted deer, sometimes even together at a time. Nowhere else in India is such an opportunity available. Sitting on elephant back like the traditional maharajas of old and viewing wild tuskers, cow elephants and their calves in a herd at close quarters is really a thrilling and adventurous experience. Gaur are among the great attractions of the sanctuary; it is worth going a long way to see these magnificent animals, one of the largest wild oxen in the world, in herds and family gatherings, from elephant back at unbelievably close quarters. Spotted deer are abundant. It is not unusual to see herds containing a hundred or more stags in some of the more open localities of the sanctuary at certain times of the year. This beautiful and peculiarly Indian deer lends a lot of colour and charm to the forest and the sight of a group of spotted deer in a sun-drenched glade is an unforgettable experience that would inspire even a novice to take out his camera and try for a picture.

Sambhur, being less gregarious than spotted deer, are less commonly seem, but there are many fine stags of this species, the largest of our deer, to be found in this sanctuary. The shy barking deer is also quite common and it's distinctive bark is by no means an uncommon sound. No visitors can fail to notice two common arboreal animals: the Giant Squirrels that impress one by their size and rich red-brown coats, and the common langur, the grey-coated, black-faced, long-tailed monkey that is so typical of an Indian forest. The fiying squirrel is not active by day and is therefore seldom seen. This animal is larger than the Giant Squirrel and makes an impressive sight as it glides through the air from one tree top to another. Other common mammals include the wild boar, porcupine, mouse-deer, black-naped hare and the playful, ever-active otter, which may be seem swimming in parties in the Moyar. The Moyar also shelters crocodiles in its remoter reaches. Other reptiles found in the sanctuary include the monitor lizard, which may commonly be seen near termite mounds after the rains, the python, the dreaded king cobra, the ratsnake, many other snakes and the quaint, little flying lizard.

To the bird watcher the sanctuary is a veritable paradise. Here one may see such typically forest birds as the Trogon, Crested Hawk-Eagle, Crested Serpent Eagle, Racket-tailed drongo, Green pigeons, spurfowl, jungle-fowl, Crow-pheasant, peafowl, doves, the huge Pied Hornbill and the Great Malabar Woodpecker. The bird life is a happy blend of varieties typical of three distinct regions: the Nilgiris, the Wynaad and the Mysore plateau.

Importance of Mudumalai Sanctuary:

In our country wildlife as a tourist attraction is gaining importance. Modern tourists show a keen interest in wild life and the aesthetic beauty of nature. Every year more and more of them visit the natural abodes of our wild animals. Certainly Mudumalai ranks second to none in faunal richness and popularity among visitors. Wild life as a tourist attraction is a vuluable source of foreign exchange to our country.

Problems facing the sanctuary

The Government of India proposes to spend Rs. 58 million to conserve endangered animals under "Project Tiger" and also to increase wild animal populations in some areas. For this a number of National Parks and sanctuaries are being constituted as Project Tiger Reserves. On the other hand the Tamilnadu Electricity Board has carried out investigations for the implementation of the Moyar Hydro-electric Project within Mudumalai sanctuary. According to the Electricity Board a dam across the river Moyar is to be constructed at Theppakkadu. To say that this would creat chaos among the wild animal populations is to put things midly.

Owing to the construction of the dam, a rest house, the elephant camp, school, offices and other scenic spots will be submerged under water. It is said that "only" 6sq. miles will be inundated by the reservoir. It is not the physical area of inundation that matters so much as the value of the area to the wildlife. Apart from inundation, the movement of heavy trucks inside the sanctuary and the formation ot new roads to the construction site will disturb the environment very substantially. It is sure to drive away the animals to remoter frontiers and deprive the area of its importance as a tourist attraction. This kind of damage can be understood only by naturalists and forest officials.

It may be argued that both hydro-electric projects and wild life can go hand in hand. This does not apply here because Theppakkadu is the heart of the Mudumalai Sanctuary. The inevitable clearance of the forest will make things still worse. In all probability, clearing may extend even upto the fringes of the catchment areas ultimately resulting in drying up of perennial streams, soil erosion, runoff and, ironically, silting up of the reservoir. Poaching by officials and labourers connected with the dam construction has been an invariable occurrence in hydel projects coming up within forests in the past and one cannot hope for Mudumalai to provide an exception. During summer, wild animals from the adjoining Bandipur sanctuary migrate to the Mudumalai sanctuary to overcome the water scarcity in Bandipur. If the dam is constructed animals from Bandipur will find it difficult to enter the Mudumalai Sanctuary as there would always be human interference.

It may be argued that even though there is a dam within the Periyar sanctuary, the wild life is found to be happy with its environment. However the Periyar dam was constructed in 1895, and the Periyar Sanctuary was formed in 1934. Definitely there would have been some disturbance to the wild life, but faunal populations in those good days were not endangered as they are now. It is not as if electricity can come only from hydel projects and hydel projects arise only in virgin forests at the expense of wildlife, especially when the project happens to be as insignificant in generating electricity as that proposed at Moyar.

It may be true that the Tamil Nadu Government is facing a possible chronic shortage of power. This does not mean that so unique a faunal area as Theppakkadu should be sacrificed or that the freshly-kindled interest of the people in wild life should be neglected. There are many other ways to solve the electricity problem. These do not need to be discussed here but it may be pointed out that while the solution of the power shortage problem need not take much time, implementation of an effective wildlife policy is a long term proposition. Concessions that lead to habitat damage are irremediable. Conservationists, wildlife enthusiasts and many others capable of taking an analytical, long-term view of things will heave a sigh of relief if the Tamil Nadu Government rejects the project. If, however, the Tamil Nadu Government feals that the Moyar Project is a must, the following suggestions may be considered to safeguard the habitat.

1. Construction of the dam should be completed within the shortest possible period of time.

2. The area inundated should be as little as possible.

3. Whatever forest clearing has to be done should be under the control of the Foreet Department.

4. Blasting of rocks inside the sanctuary should be prohibited.

5. Movement of heavy trucks should be kept to a minimum.

6. No labourer should be allowed to stay inside the sanctuary.

7. There should be a minimum number of official quarters.

8. Shooting and arms licences, if any, should be withdrawn from the officials involved in dam works.

9. Poaching and damage to wildlife should be punished severely without fear or favour.

10. Stumps in the inundated area must be removed.

* * *

ETHOLOGY

JADHAV, R. S.
(1971—73 Course)

Ethology is the science that studies parallels in behaviour between men and animals.

Among the many animal species that exist, some prey upon some others and are called predators. A predator like a panther, has to run fast to catch to prey, but its prey (eg. deer) is capable of running even faster so as to escape.

For years we have thought that only man is a 'tool making' living species. There are some very striking examples of tool making animals that make or even find tools and do something with them. Wild Chimpanzees take the branch of a tree, strip off the leaves and put it into a hole. Then they wait for a few moments and pull it out. It is full of ants which they eat.

The very same thing is true in the case of Red Indians. They take a stick, put it into a hole and eat the ants. This fact has been filmed by famous film **maker Bert Haanstra in his film 'Ethology,.**

Sea otters dive to get shell-fish but they cannot break the shells. So they dive again for stones. Then they lie down flat on the water, put the stone against them and hit the shell against the stone to break it and eat the flesh.

There are vultures in Africa that drop stones at big eggs which they cannot break. They keep these stones in their beaks and drop them at the eggs. Now, that is a tool. It is a medium to do something. Another vulture, the lammergieier, adopts dropping to break bones and hard outer shells.

If you have seen old forts you must have observed the continuous trenches allround the periphery of the fort forming a moat. This is intended as a measure of protection. In Vedanthangal near Madras, nesting water birds use only those *Barringtonia acutangula* trees that are in the deepest water. This gives them protection from terrestrial predators.

A common man has his territory over a piece of land and his house. A Zamindar used to have his territory over several hundreds of acres. Similarly in animals this concept of territory exists. A terrestrial birds territory is its nest but a carnivorous animal like the tiger or lion has his territory over several square miles.

Take the case of a bird known as the chaffinch. He must establish himself in a territory, which should supply food and shelter for himself, his mate and family. He must then sing loudly for several months. Soon he acquires a mate and trespassers must be warned off the territory by his song or driven out. Pairing must be accomplished a suitable site must be found for the nest and materials must be collected and put together securely enough to build a good nest.

Many tribals behave stmiarly.

No doubt these are simple things, and man does more complicated things. But then every human generation does not start from scratch. We have the transfer of knowledge through books, newspapers and computers, which animals don't have. One has to accept that animal behaviour has a great deal of similarity with that of man. Human accomplishment lies in analysing their behaviour and thinking over it.

Lament of Evolution

S. C. MUKHOPADHYAY

(Senior) 1971 — '73 Conrse

In that epoch of time,
when the Earth was untouchable,
When the unsaid say of budding life had not found its utterance,
On that day,
The creator, took the Earth on the path of Evolution,
with his own indomitable might,
and ordered voicelessly "Here take this Earth of yours".

○ ○ ○ ○

From that day onwards, I am trudging my way;
You did not know my face,
I was restless and changeful,
But todate I have not been able to keep my place
on a high level of evolution.

○ ○ ○ ○

You call me uneducated, inhuman
But the voice of your civilisation arose from this
care of mine,

Even today your hunger is appeased only by the sap
of my flora,
my complexion is green.

I smear myself with the colour of the revolution
But it has its continuity,
My appearance is ever changing,
At times I am brown and dry,
At others green and lively,
My life is uni-originate, uni-effable
Today the Earth is civilised,
You are destroying my identity,
Your industrial development, does not allow me to come
to my full bloom.
I have also my dis-affections.

○ ○ ○ ○

You do not know the face of the Earth primitive,
There were eruptions volcanic and earthquake tremors
But to day
You talk in work and play, of earth-erosion and
ravine and gully formation,
My request is, you bleed me white,
But in this Earth beautiful, in the light of her
civilization,
Let the tune of future life ever ring.

Andamans at a Glance

S. K. MITRA

1971—'73 S. F. R. C. Course

The Andaman and Nicobar islands consist of several large and small islands, numbering about 224. Although there are numberous islands in the Andamans, the bulk consists of three closely-connected large islands, North, Middle. and South Andamans which form almost one landmass known as Great Andaman. These islands lie in the Bay of Bengal, 120 miles from Cape Negrais in Burma, 780 miles from Calcutta and 740 miles from Madras. The bulk of the population in the Andamans is from India. The indigenous tribes number only a few hundreds. The number of indigenous tribes is decreasing and within a short time they will be only found as fully-civilised Nicobarese or in the museum. These aboriginals have cultural similarities with Samans of Malaya and Betas of the Philippines, a pigmy race. In Andaman mainly three types of aborigines are found.

1. Andamanese, who in-habit the coast-line of Middle Andaman and North Andaman.

2. Onges of Little Andaman.

3. Jarawas of middle and South Andaman and Sentinelese of North Sentinel islands.

Also there are two types of inhabitants in the Nicobar islands, (i) Nicobarese and (ii) Shompens. Nicobarese have a marked resemblance with the Indo-chinese race. In comparison to the Andamanese, the Nicobarese are a well-developed. good-humoured and lively race. The rare Jarawas of the middle and South Andamans even kill civilised people with the help of the bow and arrow.

The general climate is tropical and entirely oceanic. These islands are in the full sweep of both the South-West and North-east monsoon. The islands are mainly composed of thick eocene sediments deposited on sandstone, shales and lime stone in which basic and ultra-basic rocks are intrusive. The configuration of the ground is undulating, generally rough, divided by hill ranges encircling narrow velleys. The land is fertile and yields mainly rice, rubber, coconut, pepper, coffee, timber and other tropical produce. Considerable revenue is obtained by the exploitation of timber. The top-soil on the crests and higher reaches of the ridges has long been washed away and rocky out-crops of the sandstone series and serpentine series are common.

The mean annual temperature is 26. 3°c. The average annnal rainfall over the region is 123.3", and is received by the effect of both the monsoons. It gets most of the annual rainfall during the period from May to November. Because of the special features of geography, geology and soil structure much of the rainfall is lost due to run-off instead of being stored up. Number of rainy days is about 150 and humidity is about 81 %.

H. G. Champion classified the forests of the Andamans broadly into edaphic Pre-climax forest and Tropical climatic forest. Here we find the associations of Tidal forest, Beach forest, Tropical moist deciduous forest and Tropical wet evergreen forest. Grasslands are found mainly in the South Andamans, covering the hill slopes. For Soil Conservation measures various grasses are tried as follows:-

Panicum cambogiense, *Erichloa procera*, *Setaria palladefusea*. *Chrysopogon aciculatus*, *Brachiaria ramosa*, *Ischaemum indicum*, *Ischaemum rugosum*, *Arundo donax*, *Cynodondactylon*, *Paspalum conjugatum*, *Chloris barbata*, etc.

The main forest types which are famous in the Andamas are given below-:

a. Andamans tropical wet evergreen forest.

b. Andamans Semi-evergreen forest.

c. Andamans moist and secondary moist deciduous forest and

d. Tidal forest.

Some important species which are found in each of the above types are given as below. Andamans tropical wet evergreen forest consists of mainly.

Artocarpus chaplasha, *Hopea odorata*, *Planchonia andamanica*, *Calophyllum soulattri*, *Endospermum chinense*, *Xanthochymus andamanicum*, *Myristica andamanica*, *Caryota mitis*, *Macaranga andamanica*, *Evodia glabra*, *Mussaenda macrophylla*. etc.

Andamans Semi-evergreen forest consists ol mainly.

Sterculia campanulata, *Pterocarpus dalbergioides*, *Artocarpus chaplasha*, *Terminalia bialata*, *Dipterocarpus alatus*, *Dipterocarpus pilosus*, *Dillenia pentagyna*, *Eagraea morindaefolia*, *Garcinia andamanica*, etc.

Andamans moist and secondary moist deciduous forests consist of mainly.

Pterocarpus dalbergioides, Cinnamomum spp., Salmalia insignis, Tetrameles nudiflora, Albizzia lebbek, Terminalia procera, Chukrasia tabularis, Lannea coromandelica, Dillenias pentagyna, Diospyros marmorata, Adenanthera pavonina, Planchonia andamanica, Bambusa schitostachyoides, Oxytenanthera nigriciliata, etc.

Some climbers which are found in the forests of Andamans are

Entada phaseoloides, Ventilago madraspatana, Delima sormentaosa, Butteria andamanica, Thunbergia laurifolia, Combretum extensum, Dinochloa andamanica, etc.

Besides clearfelling, selection and shelterwood systems, a special modification of the shelterwood system called the Andamans conopy-lifting shelterwood system is used to suit local conditions mainly for species like Andaman padauk, Andaman papita. *Terminalia bialata, Dipterocarpus*, etc.,

Printed at Sukumar Printers, 76, M. N. G. Street, Coimbatore - 1. Phone: 26287.

1. Place of publication ... Southern Forest Rangers College, Coimbatore-2.

2. Periodicity of its publication ... Annual

3. Printer's Name . Shri C. P. Ethirajulu
   Nationality ... Indian
   Address ... Sukumar Printers
   31/76, M. N. G. Street,
   Coimbatore-1.

4. Publisher's Name ... Shri A. M. Mahmood Husain
   Nationality ... Indian
   Address ... Southern Forest Rangers College, Coimbatore-2.

5. Editor's Name ... Shri M. Harikrishnan
   Nationality ... Indian
   Address ... Southern Forest Rangers College, Coimbatore-2.

6. Name and address of individuals who own the newspaper and partners or shareholders holding more than one per cent of the total capital ... Nil

I, A. M. Mahmood Husain, hereby declare that the Particulars given above are true to the best of my knowledge and belief.

(Sd.) A. M. MAHMOOD HUSAIN,
PRINCIPAL,
Southern Forest Rangers College.
COIMBATORE.

THE SOUTHERN FOREST RANGERS COLLEGE MAGAZINE

ANNUAL JOURNAL OF FORESTRY, SHIKAR AND TRAVEL

The Magazine now forms a section of the Southern Forest Rangers College Association. The Editorial Board has been reconstituted and the Management Rules revised in terms of the Rules of the Association

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The Editorial Board will not be responsible for the opinions expressed in articles, notes, letters etc. other than the Editorial. The Editorial may not be the opinion of the Editorial Board.

Articles connected directly or indirectly with forestry will be accepted. Articles on other subjects can be considered according to their utility and the space available.

Articles should be legibly written in ink or preferably typed with double spacing on one side of foolscap paper leaving a margin of 1½ inches, and be **accompanied by summaries**.

Contributors are requested to give their contributions and clearly state their name, place of residence and occupation.

7. **Reprints**: Contributors can be supplied free of cost TWELVE reprints of their articles with any illustrations, provided the articles are two pages or more in length and the Editor is informed. Contributors desiring extra copies should intimate the Editor the number of copies required. They will be charged the actual expenditure incurred on them.

8. **Payment**: No payment will be made for contributions to the Southern Forest Rangers College Magazine.

9. **Free Membership**: The Magazine offers free membership of ONE YEAR ONLY, to any contributor, other than the students of the Southern Forest Rangers College, who contributes the largest number of accepted articles to the Southern Forest Rangers College Magazine.

10. **Prizes**: The following prizes will be awarded annually to the students of the Southern Forest Rangers College :-

(a) for the best articles, adjudged by a special committee constituted for this purpose, published in the Magazine.

(b) for the largest number of articles published in the Magazine.

The special Committee shall consist of :

(i) The President, F. R. I. and Colleges, Dehra Dun. (ii) The Principal, Southern Forest Rangers College, Coimbatore and (iii) The Editor, Southern Forest Rangers College Magazine.

Alumni of the College who get controlled as Associate members are also eligible for the award of the above prizes as per rules.

Appeal

The next issue of the Southern Forest Rangers College Magazine (1974 issue) is due for publication in October 1974. Forest officers (both retired and serving) and the present students of the College are cordially invited to contribute articles in English on any interesting topic under Forestry, Wild Life, Shikar, reminicences, adventures, anecdotes, personal observations or experiences in the prsofession having a bearing on forestry. Preference will be given to articles contributed by professional foresters who form the alumni of the college. Articles should preferably be typed with double spacing on one side of a foolscap paper leaving a margin of $1\frac{1}{2}$" *and should be accompanied by summaries. If there is sufficient number of qualified articles contributed either by the students of the College or Associate members forming alumni of the College, prizes will be awarded for the best article and the largest number of articles published in the Magazine. Cartoonst drawings and caricatures, are also welcomed for publication. These will have to be drawn on thick drawing paper with no pinholes or scratches or rubbings.*

As in this issue it is proposed to devote a few pages for publishing the professional and personal achievements of associate members who form par, of the Alumni of this College. Interesting developments about the associate members may please be communicated to the Editor well in time for publication in these columns.

Contributions for the 1974 issue of the Magazine should be sent to the Editor, Southern Forest Rangers College Magazine, Coimbatore - 2, so as to reach him before 15th August 1974. The Editorial Board will further appreciate it if more contributions are received from the alumni of the College and if this appeal is given wide publicity.

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I know all this sounds very complicated, but if you get of these few principles, the rest of our history will becom great deal simpler. The maps will make clear what the word fail to tell. And after this short intermission, we go back to our story and give you an account of the famous war between Carthage and Rome.

[ROME AND CARTHAGE]

The Semitic Colony of Carthage on the Northern Coast of Africa and the Indo-European City of Rome on the West Coast of Italy Fought Each Other for the Possession of the Western Mediterranean and Carthage Was Destroyed

THE little Phœnician trading post of Kart-hadshat stood on a low hill which overlooked the African Sea, a stretch of water ninety miles wide which separates Africa from Europe. It was an ideal spot for a commercial centre. Almost too ideal. It grew too fast and became too rich. When in the sixth century before our era, Nebuchadnezzar of Babylon destroyed Tyre, Carthage broke off all further relations with the Mother Country and became an independent state—the great western advance-post of the Semitic races.

Unfortunately the city had inherited many of the traits which for a thousand years had been characteristic of the Phœnicians. It was a vast business-house, protected by a strong navy, indifferent to most of the finer aspects of life. The city and the surrounding country and the distant colonies were all ruled by a small but exceedingly powerful group of rich men. The Greek word for rich is "ploutos" and the Greeks called such a government by "rich men" a "plutocracy." Carthage was a plutocracy and the real power of the state lay in rushed ahead and almost over night, created the first ntre of civilisation.

Then I showed you Mesopotamia, "the land between the rivers," which was the second great school of the human race. And I made you a map of the little island bridges of the Ægean Sea, which carried the knowledge and the science of the old east to the young west, where lived the Greeks.

Next I told you of an Indo-European tribe, called the Hellenes, who thousands of years before had left the heart of Asia and who had in the eleventh century before our era pushed their way into the rocky peninsula of Greece and who, since then, have been known to us as the Greeks. And I told you the story of the little Greek cities that were really states, where the civilisation of old Egypt and Asia was transfigured (that is a big word, but you can "figure out" what it means) into something quite new, something that was much nobler and finer than anything that had gone before.

When you look at the map you will see how by this time civilisation has described a semi-circle. It begins in Egypt, and by way of Mesopotamia and the Ægean Islands it moves westward until it reaches the European continent. The first four thousand years, Egyptians and Babylonians and Phœnicians and a large number of Semitic tribes (please remember that the Jews were but one of a large number of Semitic peoples) have carried the torch that was to illuminate the world. They now hand it over to the Indo-European Greeks, who become the teachers of another Indo-European tribe, called the Romans. But meanwhile the Semites have pushed westward along the northern coast of Africa and have made themselves the rulers of the western half of the Mediterranean just when the eastern half has become a Greek (or Indo-European) possession.

This, as you shall see in a moment, leads to a terrible conflict between the two rival races, and out of their struggle arises the victorious Roman Empire, which is to take this Egyptian-Mesopotamian-Greek civilisation to the furthermost corners of the European continent, where it serves as the foundation upon which our modern society is based.

to rebuild Babylon—he had led his troops into the heart of the Himalayan mountains and had made the entire world a Macedonian province and dependency. Then he stopped and announced even more ambitious plans.

The newly formed Empire must be brought under the influence of the Greek mind. The people must be taught the Greek language—they must live in cities built after a Greek model. The Alexandrian soldier now turned school-master. The military camps of yesterday became the peaceful centres of the newly imported Greek civilisation. Higher and higher did the flood of Greek manners and Greek customs rise, when suddenly Alexander was stricken with a fever and died in the old palace of King Hammurabi of Babylon in the year 323.

Then the waters receded. But they left behind the fertile clay of a higher civilisation and Alexander, with all his childish ambitions and his silly vanities, had performed a most valuable service. His Empire did not long survive him. A number of ambitious generals divided the territory among themselves. But they too remained faithful to the dream of a great world brotherhood of Greek and Asiatic ideas and knowledge.

They maintained their independence until the Romans added western Asia and Egypt to their other domains. The strange inheritance of this Hellenistic civilisation (part Greek, part Persian, part Egyptian and Babylonian) fell to the Roman conquerors. During the following centuries, it got such a firm hold upon the Roman world, that we feel its influence in our own lives this very day.

[A SUMMARY]

A Short Summary of Chapters 1 to 20

THUS far, from the top of our high tower we have been looking eastward. But from this time on, the history of Egypt and Mesopotamia is going to grow less interesting and I must take you to study the western landscape.

Before we do this, let us stop a moment and make clear to ourselves what we have seen.

First of all I showed you prehistoric man—a creature very simple in his habits and very unattractive in his manners. I told you how he was the most defenceless of the many animals that roamed through the early wilderness of the five continents, but being possessed of a larger and better brain, he managed to hold his own.

Then came the glaciers and the many centuries of cold weather, and life on this planet became so difficult that man was obliged to think three times as hard as ever before if he wished to survive. Since, however, that "wish to survive" was (and is) the mainspring which keeps every living being going full tilt to the last gasp of its breath, the brain of glacial man was set to work in all earnestness. Not only did these hardy people manage to exist through the long cold spells which killed many ferocious animals, but when the earth became warm and comfortable once more, prehistoric man had learned a number of things which gave him such great advantages over his less intelligent neighbors that the danger of extinction (a very serious one during the first half million years of man's residence upon this planet) became a very remote one.

I told you how these earliest ancestors of ours were slowly plodding along when suddenly (and for reasons that are not well understood) the people who lived in the valley of the

Finally Shri T. N Srivastava, I. F. S., Inspector General of Forests, Government, of India, New Delhi, proposed the Vote of Thanks, as under:

Hon'ble Minister, Ladies & Gentlemen,

The holding of a Convocation at the culmination of a course of study in a College or university is not a mere customery feature. The Convocation address by an eminent and learned person full of significance. Not only the personality but the contents of the address also inspire the students for a successful life ahead.

We are very grateful to you Sir, that despite your pre-occupations and engagement with Parliament in Session you found time to preside over this function. Your presence amidst us today has been a source of great encouragement not only to this batch of young Forest Rangers but also to the Staff of the College.

Your illuminating and thought-provoking address is of immense value to us. You have high lighted the importance of intensification of management and maximisation of production by evolution of suitable technology and the importance of social forestry. Technological advances are expected to increase productivity more in the years to come. We Foresters are keen to implement the multiple use concept of management in Forestry and therefore we are rapidly changing our traditional objective and approach. Sir, we are touched by your message and shall endeavour to abide by the spirit behind the message.

At this juncture I would like to say a few words to the youngmen who are going to join the fraternity of Foresters. You should regard yourself very fortunate that Forestry career has come your way. This is unique career which combines in itself a means of livelihood and a mission for serving the country. The career is also full of opportunities for original work which can earn you distinction. On no account should you get dissatisfied if emoluments do not match your efforts or your hard work is not rewarded immediately by a pat on your back. Remember hard and sincere work and honesty always pay in the long run.

The great community of Foresters which has a proud and enviable tradition of dedication, hard and sincere work gladly welcomes you to its fold. What you have learnt during the 2 years training is just a broad based outline and will serve as a good foundation. Modern Forestry is far more multi-disciplined a profession than it used to be in the past. You should always have a scientific bent of mind and never lose sight of the technological aspects of forestry.

No matter what your sphere of work of field of interest is, I would exhort you to keep up a high standard of work and maintain an exemplary conduct. With this kind of approach to service I am sure happiness will come your way.

In the end, once again I wish to express our gratitude to you, Sir, fo kindly agreeing to preside over today's function.

To all our guests Ladies & Gentlemen, who have graced the occasion, I. on behalf of the principal and staff of the College as well as on my own, express our sincere thanks. Without their presence and cooperation this annual function could not be a success.

Finally I would like to congratulate the Principal and the Staff of the College who imparted training to this smart band of trainees and arranged this function in a befitting manner.

Thank you.

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